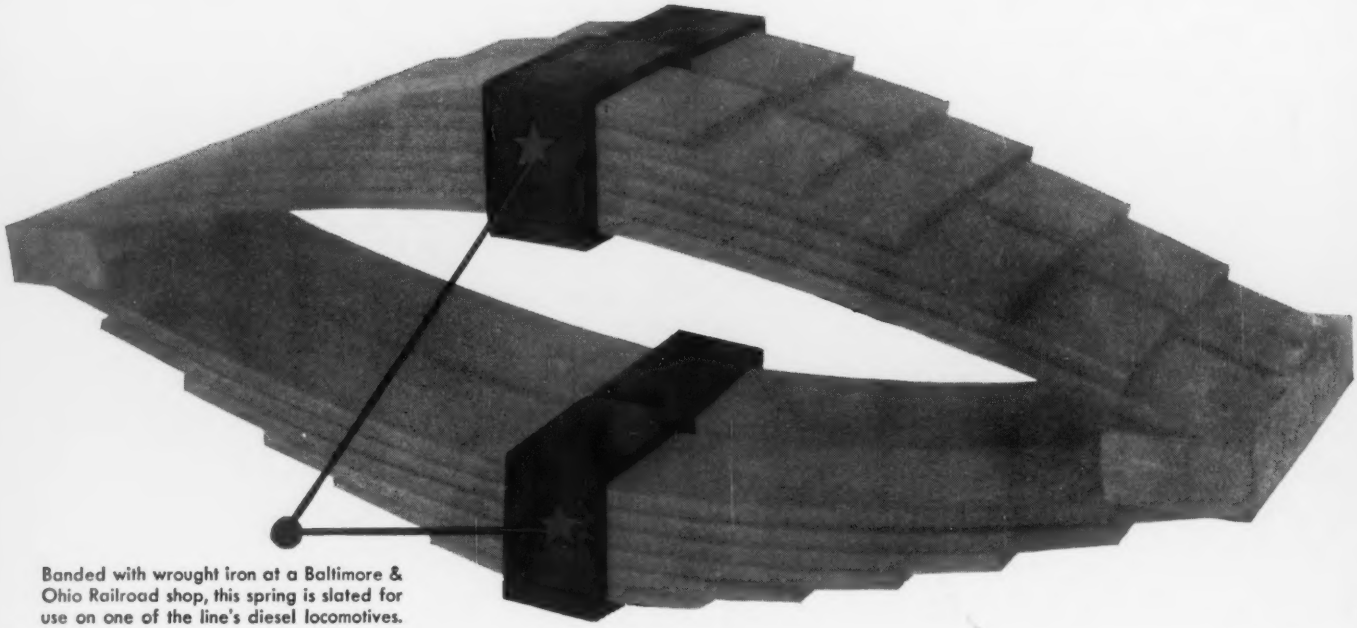
Speedy Data
How the CPR Gets It—P. 9

Why Young Engineers Shun RRs . . . p. 26

RAILWAY AGE

MAR. 18, 1957 • THE INDUSTRY'S NEWSWEEKLY



Banded with wrought iron at a Baltimore & Ohio Railroad shop, this spring is slated for use on one of the line's diesel locomotives.

Wrought Iron spring bands resist compression and snap-back

Wrought iron performs one of the most punishing tasks you can ask of a metal for a railroad application . . . holding the leaves of elliptical springs in a group.

Spring compression and snap-back cause impact stresses which would take a terrific toll on ordinary metals. But not on wrought iron. The tough hickory-like structure of this material puts the handcuffs on such punishment . . . assures longer life.

Because of the severe conditions imposed by this service, double refined wrought iron is used. Shop crews report this metal is easy to work and ideal for forge welding. When fabricating, they simply heat the bars, bend into rectangular shape, forge weld and slip over the spring leaves.

Let us tell you more about the scores of other applications where wrought iron can save in service for you. Write for our railroad booklets and state your problem.

A. M. Byers Company, Pittsburgh, Pa. Established 1864. Boston, New York, Philadelphia, Washington, Atlanta, Chicago, St. Louis, Houston, San Francisco. International Division: New York, N.Y.

Available in Canada and throughout the world

BYERS *Wrought Iron Tubular and Hot Rolled Products*

ALSO ELECTRIC FURNACE QUALITY STEEL PRODUCTS

ONE DOSAGE of DRY *Nalco* H-174 for ALL-YEAR WEED CONTROL

Low dosage — usually a small fraction of that of other "apply dry" formulations — is a big advantage you get with H-174. And it's easily explained: Nalco H-174 has an unusually high concentration of powerful killing ingredient. *You get much more killing power with much less chemical to transport and apply!*

Nalco H-174 is effective whenever you apply it, but you can get full advantage from this powerful herbicide by spreading a single dosage about 2 weeks *before* weeds begin to emerge. H-174 will keep them down all year long, eliminating unsightly and inflammable weed debris, preventing re-growth and mid-season seeding.

Spreading *dry*, granular Nalco H-174 is a fast, simple operation. No mixing, spraying, or dilution . . . ready to use as it comes from bag or convenient shaker box . . . distribute by hand or with mechanical spreaders . . . For better weed control, plan on using Nalco H-174!

H-174 is one of a complete line of Nalco weed control chemicals, both dry and liquid, in wide use by railroads and industries throughout the world.

GEARED TO PROGRESS
RPI
MEMBER

NATIONAL ALUMINATE CORPORATION
SPRAY SERVICES DEPARTMENT

6200 West 66th Place
Chicago 38, Illinois

Box 5444
Huntington, W. Va.

CANADA: Alchem Limited, Burlington, Ontario
ITALY: Nalco Italiana, S.p.A.
SPAIN: Nalco Espanola, S.A.
WEST GERMANY: Deutsche Nalco-Chemie GmbH

Nalco®

PRODUCTS . . . SERVING INDUSTRY THROUGH PRACTICAL APPLIED SCIENCE

FR-16

The high efficiency of the Miner FR-16 Rubber Draft Gear results from years of aggressive research procedure correlated with facts (not theories) learned from service and manufacturing experience.

We provide ample initial compression with 25% of the work accomplished at one-half travel so there will be no slack action, thereby preventing worn coupler carriers, draft keys, or vital car parts., The final pressures are low, ensuring the ultimate in lading protection.

W. H. MINER, INC. CHICAGO

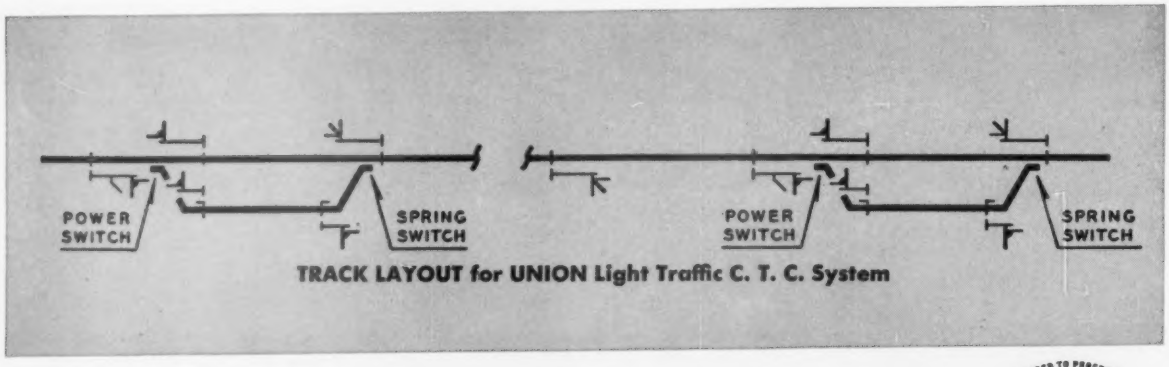
Have you investigated the possibilities of

UNION C.T.C. for LIGHT TRAFFIC LINES?

Here is a new low-cost C. T. C. system that can be installed at a cost comparable to automatic block signaling. It provides increased safety and all the basic functions of the more elaborate C. T. C. systems.

The new system complies with I. C. C. regulations and the A. A. R. Standard Code. It can be expanded readily to accommodate future changes in traffic.

We have prepared a comprehensive bulletin describing this system in detail. If you want to obtain a modern, efficient and flexible traffic control system at the lowest possible cost, write to our nearest district office. Ask for Bulletin No. 168.



TRACK LAYOUT for UNION Light Traffic C. T. C. System

UNION SWITCH & SIGNAL
DIVISION OF WESTINGHOUSE AIR BRAKE COMPANY
SWISSVALE, PENNSYLVANIA

GEARED TO PROGRESS P R I MEMBER

NEW YORK.....CHICAGO.....PITTSBURGH.....ST. LOUIS.....SAN FRANCISCO

RAILWAY AGE The Industry's Newsweekly

Vol. 142, No. 11
March 18, 1957

Departments

Financial	35
Freight Car Loadings	13
Freight Operating Statistics	50
New Equipment	13
Questions and Answers	18
People in the News	53
Railroading After Hours	34
Railway Market	13
Supply Trade	35
The Action Page	58
What's News in Products	44

EDITORIAL AND EXECUTIVE OFFICES
● NEW YORK 7, 30 CHURCH ST.

JAMES G. LYNE, Editor
ROBERT G. LEWIS, Publisher

EXECUTIVE EDITOR ..... Joe W. Kizzia
MANAGING EDITOR ..... C. B. Tavenner
NEWS & FINANCIAL EDITOR.... Fred C. Miles
TRAFFIC-TRANSPORTATION .... G. C. Hudson
MECHANICAL ..... H. C. Wilcox
F. N. Houser, Jr. James F. Berge
ELECTRICAL ..... A. G. Oehler
SIGNALING & COMMUNICATIONS
John H. Dunn Robert W. McKnight
REGIONAL NEWS ..... Robert B. Keane
PRESENTATION ..... Franklin Ryan
LIBRARIAN ..... Edith C. Stone
EDITORIAL ASSISTANTS
Ann Ortlinghaus June Meyer
DIRECTOR OF PRODUCTION.... M. J. Figa, Jr.
DIRECTOR OF RESEARCH .. Kermit C. Phillips
ART DIRECTOR ..... Russell F. Rypsam

● CHICAGO 3, 79 WEST MONROE ST.

EDITOR EMERITUS ..... Samuel O. Dunn
WESTERN EDITOR ..... Wallace W. Abbey
TRAFFIC-TRANSPORTATION.. T. H. Desnoyers
MECHANICAL ..... Norman E. Gillespie
ENGINEERING ..... M. H. Dick
R. E. Dove R. M. Schmidl
REGIONAL NEWS ..... Richard Davis
EDITORIAL ASSISTANT ..... Wanda Brown

● WASHINGTON 4, NATIONAL PRESS BLDG.

WASHINGTON EDITOR ..... Walter J. Taft

Railway Age, established in 1856, is a member of the Audit Bureau of Circulation (A.B.C.), the Associated Business Publications (A.B.P.) and the Railway Progress Institute (R.P.I.). It is indexed by the Industrial Arts Index, the Engineering Index Service and the Public Affairs Information Service. Name registered in U.S. Patent Office and Trade Mark Office in Canada.

Published weekly by the Simmons-Boardman Publishing Corporation at Orange, Conn., and entered as second class matter at Orange, Conn. James G. Lyne, president. Arthur J. McGinnis, executive vice-president and treasurer. F. A. Clark, vice-president and secretary.

PAID CIRCULATION THIS ISSUE .. 14,660

CONTENTS and
Week at a Glance

CPR steps up information flow ..... p. 9

Operating a vast rail system is more than handling cars; there's an endless flow of data that parallels the freight. To keep pace with paperwork—and provide management with information in a hurry—the Canadian Pacific has linked its car-reporting network into eight data centers. These in turn are tied to the "nerve center" in Montreal, an IBM 705 electronic computer.

ICC okays merging NC&StL into L&N p.10

A new 6,000-mile rail system takes shape in the South as a result of last week's approval of the merger of the Nashville, Chattanooga & St. Louis into the Louisville & Nashville. L&N has long controlled NC&StL but the ICC said single-management operation should provide better cost control and aid in competition with other forms of transport.

NYC streamlines a key terminal p.28

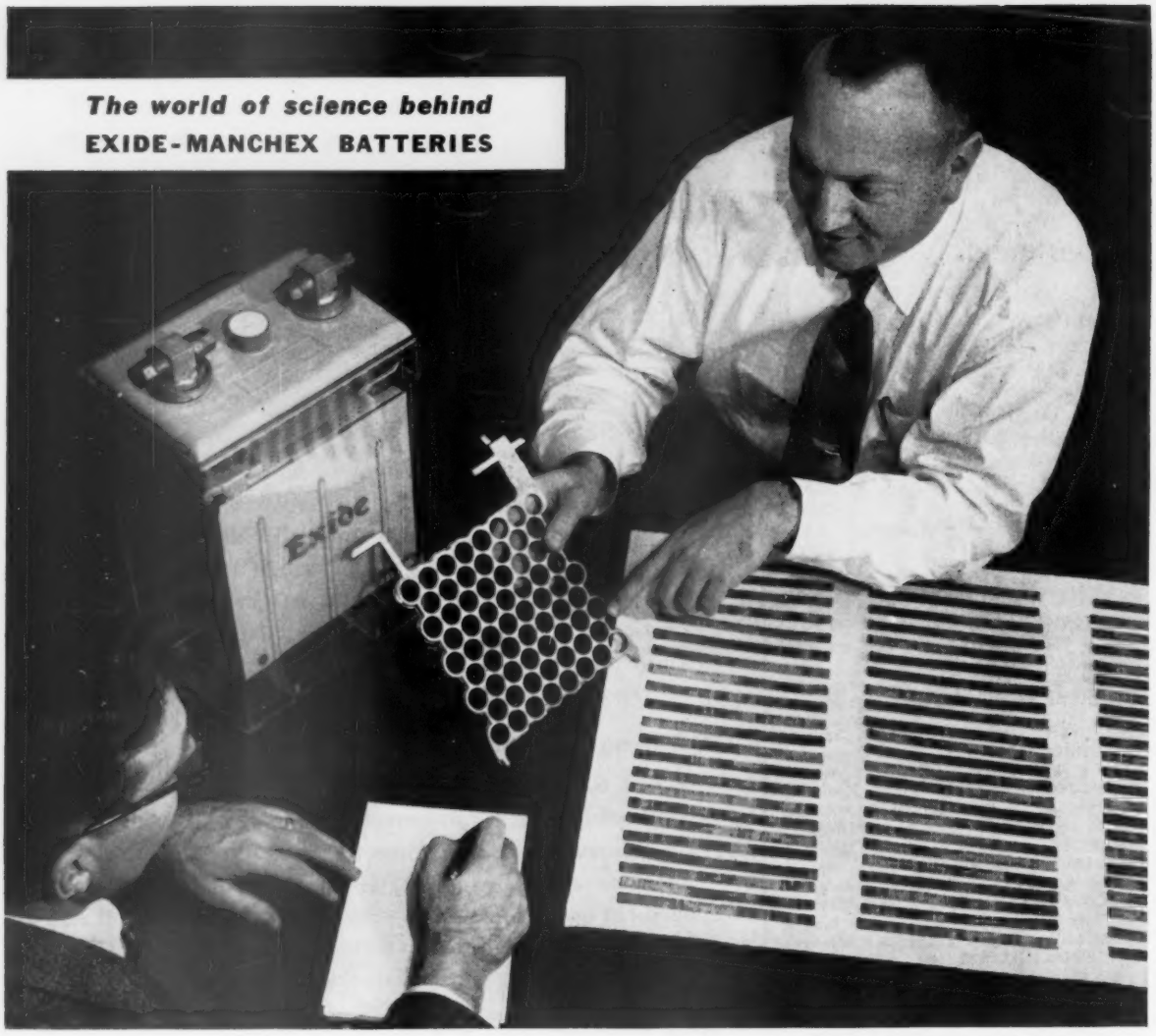
With one big new automatic yard, which it dedicated last week, the New York Central has replaced eight existing yards in Buffalo. The new Frontier yard promises sharply improved service and a 72% return on investment.

How communications tie a yard together p.30

Frontier yard not only features the latest automatic equipment for the swift handling of cars, but has a speaker network which keeps key control points within fingertip reach of each other.

Thumbs down on "economy fuel" p.31

That's how Chicago & North Western's management feels after extensive comparison tests between low-grade and regular fuels. Use of economy fuel, C&NW found, increases maintenance due to greater wear and causes engine deposits which rob the diesel of operating efficiency.



Being interviewed is Dr. H. J. Strauss, Chief Product Engineer

"Plates last longer because they're 5 times bigger"

At the Exide Laboratories— **Reporter:** Just what are all those lead strips?

Strauss: Here we've taken the spiral lead buttons from a single Exide-Manchex positive plate and unrolled them on this table. This total area is actually five times the plate size.

Reporter: I see the strips are corrugated on one side. Is that to increase the surface area?

Strauss: Yes, and also to give the electrolyte free access into the interior of the spiral buttons.

Reporter: How does this feature affect battery performance?

Strauss: It means each part of the surface of the positive plate works easier to produce electricity. An Exide-Manchex can coast where many another battery is forced to strain. And the active material lasts years longer than it otherwise would.

Reporter: Is this construction available in any other battery?

Strauss: No, only in the Exide-Manchex.

Reporter: Obviously this is an important feature of the Exide-Manchex Batteries.

Strauss: Yes it is, but it's only one of many engineering details that contribute to their long life.

Note to battery users: Whenever you order batteries for floating service applications or the equipment that requires such batteries, be sure to specify Exide-Manchex. Write for detailed bulletin. Exide Industrial Division, The Electric Storage Battery Co., Philadelphia 2, Pa.

THE ELECTRIC STORAGE BATTERY COMPANY Exide®

Current Statistics

Operating revenues, one month	
1957	$855,565,473
1956	831,707,466
Operating expenses, one month	
1957	$688,578,802
1956	661,569,057
Taxes one month	
1957	$86,726,000
1956	85,261,302
Net railway operating income, one month	
1957	$58,266,229
1956	62,724,641
Net income estimated, one month	
1957	$44,000,000
1956	47,000,000
Average price 20 railroad stocks	
March 12, 1957	88.73
March 13, 1956	103.33
Carloadings revenue freight	
Nine weeks, 1957	5,885,108
Nine weeks, 1956	6,174,403
Average daily freight car surplus	
Wk. ended Mar. 9, 1957	6,111
Wk. ended Mar. 10, 1956	3,593
Average daily freight car shortage	
Wk. ended Mar. 9, 1957	2,247
Wk. ended Mar. 10, 1956	4,720
Freight cars on order	
February 1, 1957	114,656
February 1, 1956	144,946
Freight cars delivered	
One month, 1957	7,822
One month, 1956	4,199
Average number railroad employees	
Mid-January 1957	996,105
Mid-January 1956	1,045,815

●

ADVERTISING SALES DEPARTMENT

New York 7, N.Y., 30 Church st., WO-4-3060
C. W. Merriken, J. S. Vreeland, vice-presidents, *F. T. Baker*

Chicago 3, Ill., 79 W. Monroe st., RA-6-0794
J. R. Thompson, vice-president, *J. W. Crossett, J. D. Dolan, W. J. Gatenby*

Cleveland 13, Ohio, Terminal Tower, MA-1-4455, *H. H. Melville,* vice-president *C. J. Fisher, J. C. Lyddy*

Atlanta 9, Ga., 22 Eighth st., N.E., *J. S. Crone*

Dallas 19, Tex., 3908 Lemmon ave., Lakeside 2322, *Joseph Sanders*

Los Angeles 17, Cal., 1151 W. Sixth st., MA-6-0553, *Fred Klaner, Jr., B. J. Erickson*

Portland 5, Ore., 1220 S.W. Morrison, Ca-7-4993, *L. B. Conaway*

San Francisco 4, Cal., 244 California st., GA-1-7004, *Lewis Vogler*

London E. C., 2, Eng., 48 London Wall
Sibley-Field Publishing Co., Ltd.

Frankfort am Main (16), West Germany, Wittelsbacher Allee 60
International Advertising Agency

●

SUBSCRIPTION TO RAILROAD EMPLOYEES ONLY IN U.S., U.S. POSSESSIONS, CANADA AND MEXICO, $4 ONE YEAR, $6 TWO YEARS, PAYABLE IN ADVANCE AND POSTAGE PAID. TO RAILROAD EMPLOYEES ELSEWHERE IN THE WESTERN HEMISPHERE, $10 A YEAR; IN OTHER COUNTRIES, $15 A YEAR—TWO-YEAR SUBSCRIPTIONS DOUBLE ONE-YEAR RATE. SINGLE COPIES 50c, EXCEPT SPECIAL ISSUES. CONCERNING SUBSCRIPTIONS WRITE R. C. VAN NESS, CIRCULATION DIRECTOR, 30 CHURCH ST., NEW YORK 7.

Week at a Glance CONTINUED

Venezuela builds railroads instead of highways... p.33

Because railroads have inherent advantages, for both passenger and freight service, this South American country is embarked on a 10-year building program to create a 2,637-mi rail network. Studies showed the railroad could be built, up to U.S. standards, at far less cost than a highway system strong enough to handle heavy over-the-road trucks.

Can you pull the pin on pessimists? p.58

You can when their arguments are full of holes, and that's the case with a recent piece in Harper's that paints the railroads' future in dark colors. But friends of the railroads have to stay on their toes to show up these specious soothsayings. Nobody else will do it.

SHORT AND SIGNIFICANT

Chicago-New York bus service . . .

on an 18-hour schedule is planned by Eastern Greyhound Lines. Fastest coach rail time between the cities is 16 hours; buses now make it in about 22 hours. Two-level, 43-passenger "Scenicruiser" coaches, which have lavatory facilities, will be used. Target date for starting the service is April 28.

Substantial tax reductions . . .

seem to be in the offing for railroads operating in New Jersey. A recent State Supreme Court order to bring taxes on non-main-line railroad property in line with levies on real property, which will be revalued and reassessed, may cut the railroads' taxes by over $4,000,000.

Ohio's coal pipeline . . .

was stopped up last week. An experimental run of coal "slurry" did it. Dedication and commercial use of the pipe are expected by Pittsburgh Consolidation Coal Co., its owner, this spring.

Three piggybacking railroads . . .

Chicago & North Western, the Rock Island and the Southern Pacific are reportedly talking to truckers and surveying the possibility of offering their flat cars to motor common carriers.

ONLY MOTOROLA

is really ready now for split-channel operation

Every Motorola 2-way radio system has one important built-in feature that you'll never actually see—the OBSOLESCENCE INSURANCE provided by years-ahead planning and design.

Here is the newest striking example of the far-sighted protection you enjoy in your Motorola 2-way radio. "Split-channel" operation, which permits increased use of the frequency band available to you for 2-way radio, was recently sanctioned by the Federal Communications Commission. Motorola anticipated the need years ago . . . and prepared for it by incorporating the PERMAKAY filter, oven-type crystals and adjustable Instantaneous Deviation Control into all systems. The result: Today Motorola is *really* ready for split-channel operation.

Built right into every piece of Motorola 2-way radio equipment shipped today are all the extra features necessary for simple and inexpensive conversion to split-channel operation. Every Motorola Railroad Radio ever sold is readily convertible to split-channel operation. Transmitters shipped since January, 1956 already meet or exceed the basic requirements recently set forth by the FCC. Motorola receivers and transmitters produced since 1949 require only a simple field modification kit for *full compliance* with the new rules.

Be sure your 2-way radio won't be rendered obsolete by split-channel conversion. Compare Motorola with any other system for ease and cost of conversion . . . compare the "after-conversion" performance of both and you'll see for yourself how Motorola's engineering protects you for years to come.

If you bought Motorola—you have no worry. If you are now selecting your 2-way radio, be sure it's Motorola. Select the split-channel equipment or the standard bandwidth equipment with ready receiver conversion to split-channel bandwidth.

MOTOROLA

2-WAY RAILROAD RADIO

MOTOROLA COMMUNICATIONS & ELECTRONICS, INC.
A SUBSIDIARY OF MOTOROLA, INC.
4501 AUGUSTA BOULEVARD • CHICAGO 51, ILLINOIS

Motorola consistently supplies more mobile and portable radio than all others combined.
Proof of acceptance, experience and quality.
The only COMPLETE radio communications service—specialized engineering...product...customer service...parts...installation...maintenance...finance...lease.
"The best costs you less—specify Motorola."

RAILWAY AGE
The Industry's Newsweekly

CPR Speeds 'Information in Bulk'

New data network links freight and yard offices with major data centers; management keeps informed about daily operations via central computer; manual work is pared to a minimum to save clerks' time

On a railroad with the geographical reach and operational diversity of the Canadian Pacific, a constant campaign must be waged to speed and simplify the flow of data on which its efficient operation depends. The multitude of statistics that accompanies each day's traffic flow must be translated into functional data, channelled to where it can be utilized best, and developed as meaningful information.

To accomplish these interdependent objectives, the CPR has undertaken a mammoth installation of high speed office equipment in 80 freight and 80 yard offices throughout its system. This network, primarily used for car reporting, has now been modernized to join data processing centers for handling car accounting and other information as well. Eight strategically located data centers are outfitted with additional equipment for marshaling facts relayed from outlying points and directing pertinent information to each of them.

Topping off this chain of relay centers is a central computer center which was demonstrated for the public last week at Montreal. To this point will be directed such data on daily operations as CPR management will want to use for both operating and traffic analyses and other purposes.

"The most highly mechanized railroad in America from the standpoint of modern office equipment." That claim for the Canadian Pacific is made by one observer in close touch with railroad accounting and statistical procedures.

Manual copying of such information as waybill statistics has been pared to the minimum in the plan, developed for systemwide use under the direction of E. A. Leslie, vice-president, accounting, with the assistance of H. C. Reid, assistant vice-president—integrated data processing.

A comprehensive network, from Halifax to Vancouver, has been set up by the company's communications department. It is being equipped with the newest developments in integrated data processing machinery. High speed linkages have been effected from yard office to yard office and from each of these to the data centers organized as the hubs of geographical and/or traffic load activity.

At the nerve center in Montreal a high speed IBM 705 electronic computer has just been installed. Here freight movement information will be processed for a wide variety of applications. Compilations and analyses of bulk information can be disseminated throughout the system to assist operations and to keep CPR customers, connecting carriers and the regulatory agencies informed.

The procedure followed in collecting facts to be fed to the computer is standard, using the bill of lading and waybill as basic source documents. The CPR's systemwide installation of recently developed devices and techniques—and the scope of the program itself—is the basis for the attention it has attracted.

To start the chain of events which leads to the computer, plans call for bills of lading to be abstracted at freight offices to produce waybills and a perforated tape duplicating all or part of the waybill information. The tape, produced simultaneously with the waybills on one of four types of "common language machines," is used in all operating, traffic, accounting and statistical computations.

When the tape and waybills are received at a yard office, the tapes, together with tapes for waybills from non-mechanized points and empty cars made in yard offices, are used in transmission of a Teletype message to the data center with jurisdiction for that yard. A new tape containing pertinent train movement information is produced simultaneously.

This second tape is torn by a clerk into strips, each relating to a car, and the strips are collected into "train" consists.

The torn pieces of tape are fed into a "common language machine" according to their sequence in the train consist. This machine produces a new tape and a typed record of train information; in all, a complete record in "hard copy" and tape of an outgoing train.

The outgoing train tape then is used for Teletype transmission of the consist to the next yard office as an advanced switch list, and to the data center, while the train conductor takes with him the waybills and a copy of the consist.

The four types of common language

Here's What CPR Setup Can Provide:

- Faster interline accounting
- Per diem adjustments and reports
- Car mileage registry
- Car accounting and records
- Periodic counts of cars in a yard
- Current record of cars in service
- Faster, more accurate reports to shippers on their shipments
- Easier breakdown of commodities hauled for Dominion Bureau of Statistics

machines are the Commercial Controls "Flexowriter," the Underwood "Dataflo," the Western Union "Program Factor" and an off-line arrangement of Teletype Corporation's equipment. Standard Teletype is, and will continue to be, used for yard to yard and yard to data center communication.

Tape "transmitted" from yard to yard is used in virtual repetition of the originating steps as trains are broken up and cars are diverted.

The data centers are at Saint John, N.B.; Montreal; Toronto; North Bay, Ont; Winnipeg; Calgary; Moose Jaw, Sask.; and Vancouver. They serve as relay points, utilizing equipment similar to that in the yard offices plus IBM 402 printing machines and "Transceivers."* They also handle other railroad paper work, passing it on to the computer center for processing and, on its return in the processed form, distributing it.

As freight data is received on tape at data centers from the scattered yard offices, it is fed into the "tape to card" converter. Punched cards thus produced are then used in transmission of freight train information to Montreal via the Transceiver. The return flow of processed information is then received at the data centers in the form of punched cards which again are translated into tape for relay to the yard offices.

* For an explanation of a "Transceiver," see Railway Age, March 11, p. 50.

ICC Approves Merger of NC&StL into L&N

Atlantic Coast Line also authorized to continue its direct control of L&N after the merger; L&N will rank eighth in net income among nation's railroads

The Interstate Commerce Commission has authorized merger of the Nashville, Chattanooga & St. Louis into the Louisville & Nashville for ownership, management and operation.

The decision, in Finance Docket No. 18845, also authorized the Atlantic Coast Line to continue its direct control of the L&N after the merger. Indirect control by the Atlantic Coast Line Company, a holding company, was also approved.

Financing—Approval of the financing arrangements involved granting the L&N authority to issue $19,200,000 of capital stock, consisting of 384,000 shares with par value of $50 per share. This stock is to be exchanged for 256,000 shares of NC&StL stock on the basis of 1½ L&N shares for one NC&StL share. L&N will also assume obligation and liability for NC&StL's first mortgage bonds, equipment trust certificates, and Memphis Union Station Company first mortgage bonds.

The merger brings together two railroads chartered over a century ago, which have had a financial relationship for more than 75 years. During this period NC&StL has been controlled by L&N.

In its report, the commission noted that the companies had contended throughout hearings on the merger proposal that unification of their properties would provide a transportation service more efficient and economical than could be produced by a continuation under separate management and operation. It also noted that the vote of the stockholders of each company was overwhelmingly in favor of the merger.

Mileage—The report showed that, after the merger, L&N will rank sixteenth in mileage, thirteenth in gross revenue, ninth in net railway operating income, and eighth in net income among the nation's railroads. Total mileage will exceed 6,000.

Evidence reviewed in the commission's report showed that NC&StL is an important carrier of long-haul, interline traffic while L&N has a much higher percentage of traffic originating on its own line. Principal points of interchange for the merged road will include Cincinnati, Ohio; Louisville, Ky.; St. Louis, Mo.; Memphis, Tenn.; Nashville; Knoxville; Chattanooga; Atlanta, Ga.; Montgomery, Ala.; Birmingham; and New Orleans, La.

The commission's approval of the merger is subject to a condition requiring the maintenance of existing joint routes, interchange arrangements and switching practices. The usual labor-protection conditions were also imposed.

"Combining the facilities and resources [of the two roads] under one management," the report said, "would give better control of mounting op-

Beauty Greets First CNR International Diesel

"Miss Maple Leaf" (Lorraine Chorny) holds a scroll commemorating recent arrival in Toronto of first international train in Canadian National Service to be diesel-powered. Scroll was presented to John Rylott, engineman on the historic run. Diesel units hauling the train—the "Maple Leaf" — carried markings of the CNR's Grand Trunk Western.

erating costs and enable the surviving company to meet more effectively competition from other modes of transportation. The anticipated accomplishments from the merger would give assurance of a stronger and financially more stable railroad.

"Single ownership and control of the properties will tend toward a more economical and efficient operation which, in turn, will inure to the benefit of the shipping public. It will also result in desirable corporate simplification, will reduce accounting work with its attendant expenses, and will materially reduce the number of reports which must now be filed individually by the applicants with regulatory commissions and other public authorities."

Intercoastal Barge Service Authorized by the ICC

The Interstate Commerce Commission has authorized Alaska Freight Lines to conduct an inter-coastal barge service — between Seattle, Wash., and Portland, Ore., on the one hand, and New Orleans, La., and Texas Gulf ports on the other.

The commission's decision was embodied in a report on further hearing in W-1055 (Sub. No. 1), and it reversed a 1954 decision which denied Alaska's application. Railroads in western, central and southern territories opposed the application.

The commission withheld issuance of a certificate until Alaska complies with a stipulation that it acquire for the proposed service "not less than three towing vessels and six barges of not less than 2,000 tons' capacity." Alaska is presently operating a like service between Seattle and Alaska and a trucking service within Alaska.

RRs Still Handle Third of Revenue Passenger Traffic

Railroads perform more than one-third of total intercity revenue passenger miles performed by all carriers of passengers.

This is shown by figures compiled by the ICC's Bureau of Transport Economics and Statistics. The compilation differs from that which the bureau publishes annually to show volume of intercity travel by various kinds of transport, including private automobiles. On that basis, less than 5% of total intercity passenger-miles involve travel by rail (Railway Age, Nov. 26, 1956, p. 13).

On the revenue - passenger - mile basis, railroads in 1955 handled 37.68% of the traffic. Bus lines performed 32.98% of the total, air lines (including non-scheduled operators), 27.05%, and water lines, 2.28%. Railroads and bus lines have lost ground since 1949 when their respective proportions were 49.58% and 38.5%. Meanwhile, the air lines' 27.05% rejected a gain from their 1949 figure of 9.99%. The water carriers' proportion was up slightly, their 1949 figure being 1.93%.

Pension Liberalizers Get Hearing

Senate and House hearings got under way last week on organized railroad labor's 1957 program for liberalizing the Railroad Retirement and Railroad Unemployment Insurance Acts.

Separate hearings were being held by the Senate Committee on Labor and Public Welfare and the House Committee on Interstate and Foreign Commerce. In turn, they were considering S.1313, and H.R.4353 and H.R.4354, bills embodying the liberalized-benefit and tax-increase phases of the program.

Tax-Offset—A separate bill, H.R.-5551, has now been introduced to carry out that phase of the program which proposes that the higher payroll taxes to finance the increased Retirement-Act benefits be made painless for the employees. H.R. 5551, now before the House Committee on Ways and Means, would accomplish this by excluding from employees' taxable income the whole amount of the payroll taxes paid by them. Moreover, it bids for general labor support by proposing to do the same for employees paying under the Social Security and the Civil Service retirement systems.

When this proposal encountered opposition last year, it was abandoned, and legislation increasing Retirement-Act benefits by 10% was passed without financing provisions. When President Eisenhower approved that legislation, he issued a statement saying it was "imperative" that legislation to finance the new benefits be enacted this year. He also expressed his opposition to any plan whereby payroll taxes paid by employees would be excluded from their taxable income.

Part of Program—The railroad labor organizations nevertheless made the tax-offset feature the "third point" of their 1957 program, the two other points being the increased benefits and the increased taxes. In supporting S.1313 before the Senate committee, Lester P. Schoene, counsel for the unions, emphasized that this bill deals only with the latter points, and that H.R.5551 is an integral part of the program. In response to questions, he said his clients would not favor enactment of S.1313 unless the tax-offset proposal were enacted, too.

Meanwhile, railroad management's

'Mobile Reefers' Make a Hit Hauling Meat

With four successful test months behind them, North American Car Corporation will "probably" adapt its mobile reefer boxes to the shipment of other refrigerated products, frozen products and non-refrigerated goods. Limited initially to handling meat, and cooled with dry ice, the mobile boxes have been in regular Milwaukee service since last fall.

representative on the Retirement Board, Thomas M. Healy, had opposed the program, saying "the immediate additional tax burden for the railroads would amount to $200 million a year and in 1975 the added amount would be nearly $257 million annually." Railroad management representatives followed to oppose the bill, but it was supported by RRB's other two members—Chairman Howard W. Habermeyer and Horace W. Harper, who is labor representative on the board.

The proposed changes in the Retirement Act would: (1) increase practically all retirement and survivor annuities by another 10%; (2) provide for payment of an insurance lump sum, even though there are survivors immediately entitled to survivor annuities; (3) permit women employees to retire on reduced annuity at 62 years of age, even though they have less than 30 years of service; (4) provide for payment of a spouse's annuity on a reduced basis at age 62; (5) put the outside-earnings limit for disability annuitants on an annual, rather than monthly, basis and thus permit such annuitants to earn up to $1,200 a year in employment outside the railroad industry.

As to unemployment benefits, it is proposed that the daily benefit rates be increased from 50% to 60% of the daily rate of pay for the employee's last employment in his base year—up to a maximum of $10.20. The present maximum is $8.50. The annual compensation needed to qualify for unemployment insurance benefits would be raised from $400 to $500.

Provision would also be made for extended benefits to an unemployed person who spent five or more years in railroad service, and who had exhausted his other unemployment benefit rights. The proposed arrangement would provide benefits for periods ranging from 18 months, in the case of employees with more than five but less than 10 years of service, to 4½ years for employees with 20 or more years of service.

Financing provisions are designed to take care of the proposed new Retirement-Act benefits, and to make up deficits in the retirement fund, including that resulting from last year's liberalizer. The maximum creditable and taxable compensation would be increased from $350 to $400 a month, and the retirement tax rate would be increased from 12½% to 15%. Half of this tax is paid by the employees and half by the railroads.

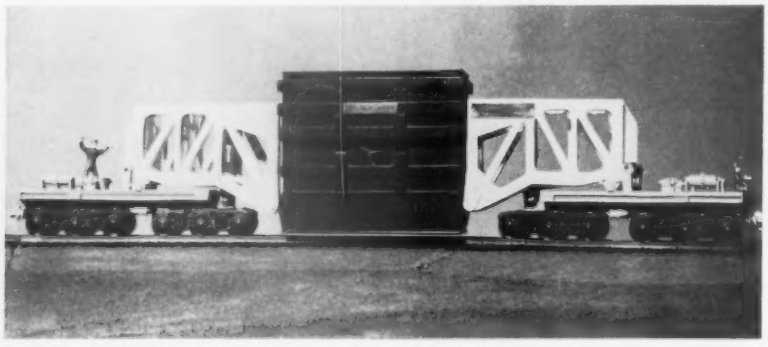
Railroads alone pay the other payroll tax which supports the unemployment insurance system. Here, too, the tax would be revised, becoming based on wages paid up to $400 per month instead of $350. The rate is on a sliding-scale basis, ranging from ½% of taxable payroll, when the unemployment reserve account is $450 million or more, to 3%, when the reserve falls below $250 million. Under the proposed legislation the range would be from 2% to 4%.

Three-Part Car Will Carry Huge Loads

A railroad car in three parts, one part being the actual load the car is carrying, has been designed by Westinghouse Electric Corporation. The car, for transporting huge power transformers now required by utilities, is being built by the Greenville Steel Car Company and will be placed in operation early this summer.

The car, with a load capacity of 500,000 lb, will transport a transformer 28 ft long and 12 ft wide. Each of its two identical sections are about 30 ft long and consist basically of an underframe with trucks on which is mounted a steel truss (see illustration). The transformer is suspended between the two trusses, forming the complete car. Primary benefiit of the car is that the transformer can be lowered to within about six inches of the rails.

The car, which has an overall length of about 90 ft when carrying a 28-ft transformer between car connections, can negotiate the same curves as a standard box car. Two 100-ton hydraulic jacks at each load center facilitate loading and unloading. Use of the car is limited to certain types of transformers. For the return trip of the unloaded car, the two end halves are hooked together and returned as a conventional car.



NEW CAR opens at center to handle big transformers.

January Net Was Down $3,000,000

Class I railroads in January had an estimated net income, after interest and rentals, of $44 million, compared with $47 million for January 1956.

The estimate was made by the Bureau of Railway Economics of the Association of American Railroads, which also reported that January net railway operating income, before interest and rentals, was $58,266,229—down nearly $4½ million from January 1956's $62,724,641.

Twenty-seven Class I roads failed to earn interest and rentals in January. The rate of return for the 12 months ended with January averaged 3.93%, compared with 4.21% for the 12 months ended with January 1956.

CLASS I RAILROADS—UNITED STATES

Month of January

	1957	1956
Total operating revenues	$ 855,565,473	$ 831,707,466
Total operating expenses	688,578,802	661,569,057
Operating ratio—per cent	80.48	79.54
Taxes	86,726,000	85,261,302
Net railway operating income (Earnings before charges)	58,266,229	62,724,641
Net income, after charges (estimated)	44,000,000	47,000,000

ICC Proposes Transport Regulatory Plan for Alaska

The Interstate Commerce Commission has submitted a transport regulatory plan for Alaska to the Senate Committee on Interstate and Foreign Commerce. The submission was in response to a request the committee made last year.

Generally, the plan contemplates various amendments to the Interstate Commerce Act which would give the commission comprehensive jurisdiction over for-hire surface transportation to, from and within Alaska.

Section 22 quotations could not be

(Continued on page 14)

MARKET OUTLOOK THIS WEEK

Loadings Fall 4.5% in Week

Loadings of revenue freight in the week ended March 9 totaled 672,386 cars, the Association of American Railroads announced on March 14. This was a decrease of 31,598 cars, or 4.5%, compared with the previous week; a decrease of 25,215 cars, or 3.6%, compared with the corresponding week last year; and an increase of 10,103 cars, or 1.5%, compared with the equivalent 1955 week.

Loadings of revenue freight for the week ended March 2 totaled 703,984 cars (these loadings were incorrectly ascribed, in last week's issue, to the week ended February 2); the summary, compiled by the Car Service Division, AAR, follows:

REVENUE FREIGHT CAR LOADINGS

For the week ended Saturday, March 2

District	1957	1956	1955
Eastern	118,878	121,936	113,288
Allegheny	145,816	145,356	125,336
Pocahontas	64,744	60,961	45,955
Southern	125,579	131,727	125,640
Northwestern	79,383	75,507	71,734
Central Western	114,776	117,433	113,701
Southwestern	54,808	58,056	57,921
Total Western Districts	248,967	250,996	243,356
Total All Roads	703,984	710,976	653,575
Commodities:			
Grain and grain products	55,514	46,350	43,441
Livestock	5,629	7,208	6,668
Coal	136,746	135,657	108,339
Coke	13,559	13,388	10,194
Forest Products	42,339	45,402	42,272
Ore	26,522	20,742	15,672
Merchandise l.c.l.	58,816	64,132	64,679
Miscellaneous	364,859	378,097	362,310
March 2	703,984	710,976	653,575
February 23	626,636	687,018	631,072
February 16	675,966	698,319	650,248
February 9	665,251	684,328	638,788
February 2	647,972	680,989	635,779
Cumulative total, 9 weeks	5,885,108	6,174,403	5,714,114

IN CANADA.—Carloadings for the seven-day period ended February 28 totaled 74,146 cars, compared with 75,439 cars for the previous seven-day period, according to the Dominion Bureau of Statistics.

	Revenue Cars Loaded	Total Cars Rec'd from Connections
Totals for Canada:		
February 28, 1957	74,146	34,812
February 28, 1956	91,095	40,281
Cumulative Totals:		
February 28, 1957	594,316	268,723
February 28, 1956	641,134	293,697

New Equipment

FREIGHT-TRAIN CARS

► *Cotton Belt.*—Budgeted $1,440,350 to buy 100 additional covered hopper cars and 50 pulpwood rack cars for delivery this year.

► *Gulf, Mobile & Ohio.*— Ordered 50 70-ton mill-type gondola cars, Bethlehem Steel, for January 1958 delivery, and 10 19,000-gal. tank cars, ACF Industries, for delivery next August.

► *Magor Car Corp.*—Received following order for equipment to be used in Venezuela: 110 box cars, 25 gondola cars, 15 stock cars, 10 flat cars, 10 tank cars and 5 special box cars; also, Magor will build, for South Porto Rico Sugar Co., 160 30-ton cane cars for service in Dominican Republic.

► *Norfolk Southern.*—Increased by 25 units previous order placed with Bethlehem Steel for 50 50-ton hopper cars; cost $172,000; delivery scheduled for next April.

► *North American Car Corp.*—Ordered 200 70-ton covered hopper cars, 125 from Pullman-Standard and 75 from ACF Industries; estimated unit cost $11,000; delivery expected next September-November.

► *Union Pacific.*—Ordered 500 70-ton gondola cars, Bethlehem Steel.

► *Wabash.*—Ordered four 70-ton covered hopper cars, Pullman-Standard, for immediate delivery.

LOCOMOTIVES

► *India.*—Railway Board of this country's government soon will consummate order with Alco Products for 100 2,000-hp diesels, at approximate cost of $22,400,000, according to Foreign Commerce Weekly; shipments are to begin in mid-1957 and be completed early in 1958.

PASSENGER-TRAIN CARS

► *Burlington.*—Ordered 10 air-conditioned gallery cars, Budd Company; cars, similar to 50 units already in Burlington service, will be delivered in third quarter of 1957; they will seat 145 persons, with double seats for 94 on main floor and single seats for 51 in balconies.

SPECIAL

► *Southern Pacific.*—Has purchased 44 26-ft Airstream Overlander trailers for use by maintenance crews as overnight accommodations while on jobs in remote areas; each trailer—finished on the interior with Zolatone, multi-colored plastic coating—provides twin or double beds, stove, shower and tub, and a refrigerator.

(Continued on next page)

a RAILWAY AGE workbook page

MARKET OUTLOOK (continued)

New Facilities

► *Canadian Pacific.*—Authorized steel-frame extension to diesel servicing shop at Alyth, Alta., and new office building at Winnipeg.

► *Central of Georgia.*—Directors have authorized expenditure of almost $2,000,000 for 1957 rail-laying program; 40 track miles of new 115-lb rail will be laid in main lines, and 13 miles of relay rail will be put into secondary lines.

► *New York City Transit Authority.*—Has placed $9,395,000 order with Union Switch & Signal-Division of Westinghouse Air Brake Company for designing signaling apparatus and installing signaling system on Broadway-7th Avenue subway line from Pennsylvania Station (34th street), to and including 96th street interlocking; new push-button Union route-control machine will be installed at Times Square to control interlockings at 34th street-Times Square area, 72nd street and 96th street.

NYC Maintenance Men Study Diesel Engines

Better understanding of how to get maximum efficiency and longer life from diesel engines that power maintenance equipment was the goal of a recent New York Central three-day training session in Jackson, Mich. Forty-five of the road's top maintenance men attended the school, which was conducted by General Motors' Detroit Diesel Engine Division and sponsored by Peninsular Diesel, Inc., distributor for Detroit Diesel in Michigan's lower peninsula. Left to right, above, are Detroit Diesel instructor, J. T. Frederickson, Jr.; H. C. Nordstrom, NYC assistant superintendent of maintenance equipment; M. E. Kerns, superintendent of the road's MOW shops; Paul Martin, NYC superintendent of maintenance equipment.

(Continued from page 12)
applied to government traffic moving to, from or within Alaska under the commission's plan—except in time of war or other national emergency declared by Congress or the President.

Another feature of the plan is its proposal to give the commission more through-routes authority than it has as to carriers in this country. Such authority would empower the commission to require railroads in the States to join in through routes and joint rates with motor carriers in Alaska "where there is included an intermediate connecting water carrier operating between the States and Alaska which has through routes and joint rates with Alaskan motor carriers."

15 Roads Paid February Fines Totaling $11,000

Fifteen railroads paid fines in February totaling $11,000, plus costs, on 110 counts of violating the Safety Appliance, Hours of Service and Signal Inspection acts.

This was reported by the ICC, which also reported that the largest amount, $5,300 and costs, was paid by the Pennsylvania for 53 violations of the Safety Appliance Acts. Next came payments totaling $1,300 and costs by the Patapsco & Back Rivers for 13 violations of the same acts.

California Bill Would Limit RR Crossing Costs

The California legislature is considering a bill to put definite limits on what railroads are required to pay for highway grade crossing projects.

Grade crossing costs have been a hot subject—especially in California—as highway construction picks up under the expanded federal program. Railroads can't be required to pay more than 10% of the cost of separation or elimination projects built partly with federal-aid funds—but if federal money isn't involved, states have been pretty free to hit railroads for half or more of the cost.

In essence, the California bill would consider who initiated a crossing project, and who would benefit from it, in allocating costs where federal money isn't involved. It doesn't, however, adhere strictly to the theory of federal law that railroads should pay only in relation to the benefits they receive, up to 10% of the total cost.

Leaving room for negotiation of allocations in all cases, the bill sets up four categories of crossing projects:

- Those which don't eliminate existing crossings — for which the public agency or railroad initiating the project would pay the entire cost;
- Those initiated by public agencies which do eliminate an existing crossing—for which a railroad would pay an amount equal to its "direct and computable" savings capitalized at 5%, plus 10% of the cost "attributable to the presence of the railroad facilities";
- Those initiated by a railroad which result directly in elimination of a crossing — for which the public agency concerned would pay 10% and the railroad the rest;
- Those involving alteration of an existing grade separation, either to increase its highway capacity, for which the public agency would pay 90%; or to increase its railroad capacity, for which the railroad would pay 90%.

B&O Expands Piggyback

The Baltimore & Ohio extended its piggyback service March 18. The new arrangement permits eastern and central freight users to ship and receive via piggyback as far west as Omaha, Denver and Billings, Mont. Many intermediate cities in the west are also included.

Western railroads participating in the service extension are the Santa Fe; Chicago & North Western; Burlington; Rock Island; Colorado & Southern; Minneapolis & St. Louis; Missouri Pacific; Union Pacific; and the Wabash.

Plan Jamestown Festival

"Captain John Smith" tells John G. Metz, Chesapeake & Ohio assistant passenger traffic manager, all about the forthcoming Jamestown Festival, 350th anniversary of the first permanent English settlement in the New World. The festival will run from April 1 to November 30. The "captain" (actually Christian Munt, sales manager for Richmond Hotels, Inc.), met Mr. Metz at the recent meeting in the Greenbrier Hotel, White Sulphur Springs, W. Va., of the C&O passenger traffic department's staff. The railroad is helping promote the festival.

Equipment Trusts Now Upgrade Diesels

A "first" in financing improvements to motive power will be scored this month by the Chicago & North Western and Halsey, Stuart & Co. Financing locomotive purchases with equipment trusts isn't new, but using them for upgrading diesel power is.

Two diesel-electric units which the Electro-Motive Division of General Motors will deliver to the C&NW this month went into EMD's shops as nine-year-old 1,500-hp F-3's and will come out as 1,750-hp GP-9's, covered by the same type of warranty that new locomotives carry.

Ten more units are being upgraded under the current financing; another 20 remain to be financed—and upgraded—later.

In essence, the C&NW used its old diesel units as a down payment and covered the remaining 69.3% of the cost with an equipment trust issue which Halsey, Stuart bought on February 27 (Railway Age, Mar. 11, p. 9).

The certificates carried a coupon rate of 5½%, a 15-year maturity schedule and a par value of $1,335,000 (Railway Age, Mar. 4, p. 40).

Cast Steel Wheel Tests To Continue

Despite approval, as AAR standard, of the one-wear cast steel wheels for freight car service—which became effective March 1—both large producers of these wheels, the Griffin Wheel Company and the Southern Wheel Division of American Brake Shoe Company, will continue obtaining data on test wheels now in service. A high percentage of the initial application of these wheels is still rolling up mileage in service.

In the February 11 issue of Railway Age, page 17, the AAR quarterly report of mileage to date is shown for both companies. The figures shown are actually the average accumulated mileages. From the additional data to be obtained, both companies expect far greater mileages will be reflected before the tests are concluded.

Revenue Down for Average Loaded Car

Average revenue per loaded freight car in 1955 was $244, down $6 from the 1952 average of $250. The revenue per car-mile was off two cents—from 1952's 57 cents to 1955's 55 cents.

These comparisons were made by the ICC's Bureau of Transport Economics and Statistics in its "Transport Economics." The bureau also noted, however, that 1955 average revenues were higher than the 1952 figures for four types of cars—refrigerator, tank, special, and stock. The revenue comparisons, and others on the average haul per car, are set out in the table.

The bureau also estimated that the average box car earned $5,700 in 1955, and that the year's earnings of other types of cars were: refrigerator, $4,900; flats, $4,000; tanks and specials, $3,500; gondolas and hoppers, *(Continued on page 35)*

AVERAGE REVENUE AND LENGTH OF HAUL[1] BY TYPE OF CAR—1952 AND 1955

Type of car	Revenue per loaded car		Haul per car		Revenue per car-mile	
	1952	1955	1952	1955	1952	1955
Refrigerator	$436	$440	1,260	1,306	$0.35	$0.34
Box	332	332	613	647	.54	.51
Flat	303	278	474	437	.64	.64
Tank	283	294	430	442	.66	.66
Gondola	221	198	277	248	.80	.80
Special	183	190	203	210	.92	.90
Stock	183	204	666	784	.27	.26
Hopper	143	140	213	210	.67	.67
All cars	250	244	439	445	.57	.55

[1] Short-line distance.

Does this make sense? A 30-minute walk for a 30-second phone call?

Phones where you need 'em!

. . . a major consideration in modernizing your communications for PROFIT

The telephone is the workhorse of your communications system. When phones are where you need them—rolling stock *rolls*, customer problems are ironed out fast, trouble is reported quickly—operating costs go down!

With a private, company-owned dial telephone system, every key employee can dial direct to any point on the line . . . anytime. No frustrating "priorities" . . . no toll charges . . . no rental . . . no "long-distance" walking or waiting. Vital phone calls are *made*—not postponed or forgotten.

Your own Communications Superintendent is thoroughly aware of the importance of adequate communications in cutting operating costs. We will be happy to work with him and your management in modernizing your present telephone network, using wires you already own. We've done this for many railroads!

May we send you more information?

The story of how a major road cuts costs drastically with a modernized communications network is told in an interesting illustrated brochure. For your copy of Circular #1763, write or call Automatic Electric Sales Corporation, 1033 W. Van Buren St., Chicago 7. In Canada: *Automatic Electric Sales (Canada) Ltd., Toronto.* Offices in principal cities.

AUTOMATIC ELECTRIC

ONE OF THE WORLD'S GREAT TELEPHONE EQUIPMENT MANUFACTURERS

Questions and Answers

Of current interest | to the Transportation Department

THE PROBLEM—as presented in the January 21 issue:

A Portland, Ore., lumber mill had to load, under Car Service Rules, 15 box cars of different ownerships to an equal number of cities (listed in the March 4 issue, p. 17). The objective was to load the cars so that when they reached their destinations they would be (1) on the owning road; (2) at a junction with the owning line; or (3) within 200 miles of a junction with the owner. The correct answers appear in the March 4 Railway Age.

Ten railroads reprinted this quiz and asked their car handling employees to send us the answers. According to letters received from officers of some of these lines, they feel that this is an entertaining and effective way to teach "an important subject." With that encouragement we may run another of these quizzes later on in the year.

CONDUCTED by G. C. RANDALL, district manager, Car Service Division (ret.), Association of American Railroads, this column runs in alternate weekly issues of this paper, and is devoted to authoritative answers to questions on transportation department matters. Questions on subjects concerning other departments will not be considered, unless they have a direct bearing on transportation functions. Readers are invited to submit questions, and, when so inclined, letters agreeing or disagreeing with our answers. Communications should be addressed to Question and Answer Editor, Railway Age, 30 Church Street, New York 7.

More answers to the Car Service "Quiz."

Below are the names of 84 persons who answered the "quiz" correctly. This brings to 423 the number of correct solutions received, amounting to 55.7% of the total of 759 replies to this "quiz" received up to the deadline for returns.

Respondents represented 58 railroads, plus numerous other organizations and supply companies, and a fair number of railroad "buffs." Some of these "fans" incidentally, really know their stuff. One of them has "hit," I believe, every quiz we've run.

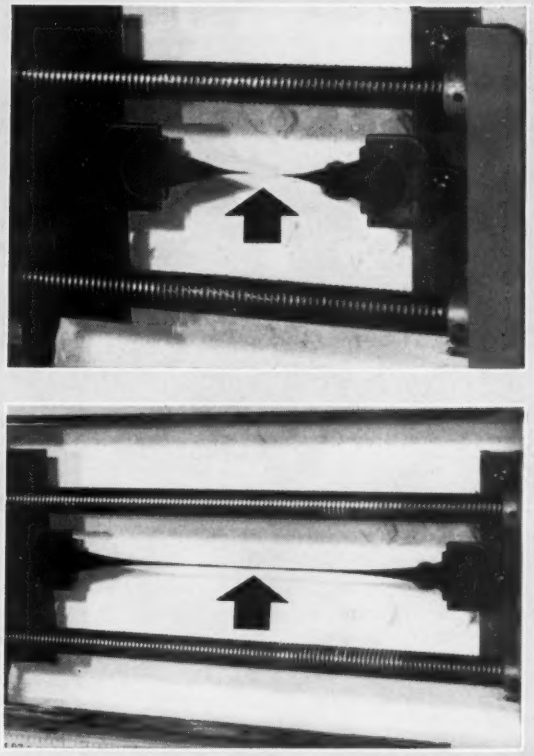
Where they went wrong.

The most common mistake made by those who didn't get all the answers right was in sending the Norfolk Southern car to Washington, D. C. The short line distance to Norfolk, Va., the nearest junction with the owner, from Washington is 205 mi. While this distance is only five miles more than the 200 mi specified in the quiz conditions, the correct solution placed the NS car at Asheville, where it would be somewhat less than 200 mi from home.

Our apologies to P. W. O'Brien, transportation inspector of the New York Central at Cleveland, who was erroneously listed in the March 4 issue as being a Nickel Plate employee.

ASSOCIATION OF AMERICAN RAILROADS—CAR SERVICE DIVISION—(car service agents): J. Curtis, Rensselaer, N.Y.; J. J. McKeone and W. Tobin, Jr., New York; W. Mulhern, clerk-stenographer, New York.
BALTIMORE & OHIO: A. S. Woods, assistant manager—labor relations, Baltimore.
CHICAGO, BURLINGTON & QUINCY: P. C. Gardner and W. W. Lebsack, Lincoln, Neb.
CHICAGO, MILWAUKEE, ST. PAUL & PACIFIC: E. A. Lehmann, brakeman, Minneapolis, Minn.
ERIE: K. C. Bissell, chief car distributor, Cleveland; I. W. Carpenter, clerk, Rochester, Ind.; S. J. Cleckner, night yard clerk, Barberton, Ohio; J. K. Cubby, agent, New York; H. Davis, car distributor, Youngstown, Ohio; F. J. Francis, agent, Lima, Ohio; E. F. Kale, chief clerk, Akron; R. F. Layer, chief clerk, Mansfield, Ohio; Louis Ferraro, yard clerk and M. F. Mulleic, yardmaster, Paterson, N.J.; J. T. Murphy, inspector operations, Cleveland; W. F. Rathburn, agent, Mansfield, Ohio; T. C. Rooney, chief car distributor, Jersey City, N.J.; F. J. Vimmerstedt, assistant car distributor, Youngstown, Ohio; R. E. Wyllie, yard clerk, Mansfield, Ohio.
GREAT NORTHERN: T. G. Hooker, trainmaster, E. S. McFarland, freight agent, G. A. Street, assistant car distributor, and J. A. Whittaker, station inspector, Spokane, Wash.; W. L. Smith, trainmaster, Seattle; C. E. Murphy, agent, Browning, Mont.
NEW YORK CENTRAL SYSTEM: J. K. Gardner, supervisor car utilization, Cleveland; W. Goodman, clerk, Paris, Ill.; A. J. Pitchenau, freight agent, East Rochester, N.Y.; M. W. Sink, yard clerk, Utica, N.Y.; E. D. Stanton, yard clerk, Rome, N.Y.; W. A. Streeter, agent, Fonda, N.Y.; R. A. Weber, agent, Hope, Ind.
NEW YORK, CHICAGO & ST. LOUIS: A. A. Armbrecht, agent, Findlay, Ohio; L. M. Pratt, clerk, LaPorte, Ind.
NORFOLK & WESTERN: C. W. Bradshaw and A. F. Tucker, clerks, Crewe, Va.
NORTHERN PACIFIC: A. C. Brooking, agent, Livingston, Mont.; R. G. Drew, agent, St. Regis, Mont.; R. C. Hall, joint agent, Sidney, Mont.; J. G. Heimsjo, trainmaster, Butte, Mont.; R. H. Morrow, agent, Bozeman, Mont.; C. A. Nyman, general yardmaster, and T. T. Thorson, agent, Missoula, Mont.
PENNSYLVANIA: J. E. Baker, Jr., head clerk, W. C. George, yardmaster, and J. B. Gilluly, clerk, Phillipsburg, N.J.; T. J. Duffy, assistant yardmaster, Jersey City; L. Darrah, yard clerk, Elmira, N.Y.; C. E. Haiston, interchange clerk, Hagerstown, Md.; M. E. Lanni, assistant yardmaster, Jersey City; Joe McFadden, yardmaster, and K. D. Snyder, crew dispatcher, Phillipsburg, N.J.; G. B. Potash, Jr., yardmaster, South Amboy, N.J.
RUTLAND: N. A. Drake, agent, Proctorsville, Vt.; D. P. Looby, agent, Shelburne, Vt.; C. N. Messier, agent, Mooers, N.Y.; W. L. Roberts, agent, Vergennes, Vt.; G. E. Smith, agent, Middlebury, Vt.
ST. LOUIS-SAN FRANCISCO: L. C. Aldrich, agent, Leon, Kan.
SOUTHERN PACIFIC: J. C. Adams, agent, Bakersfield, Cal.; A. F. Eichorn, agent, Redding, Cal.; T. A. Hoell, and Marion Hunt, clerks, Crockett, Cal.; Alex Laurinas, car distributor, San Jose, Cal.; C. E. Larson, assistant car distributor, and L. L. Reidy, car distributor, Portland, Ore.
WESTERN PACIFIC: E. D. Brown, car service inspector, and A. C. Evans, inspector of transportation, San Francisco.
WESTERN MARYLAND: G. S. Barton, agent, Blaine, W. Va.
WABASH: Jas. F. Etheridge, Jr., assistant trainmaster, and B. P. Woolridge, Kansas City, Mo.; H. W. Rossmiller, Monticello, Ill., R. E. Sablotny, secretary, and R. W. Wills, trainmaster, Decatur, Ill.
OTHER THAN RAILROAD EMPLOYEES: E. W. Orr, Jr., Lafayette, Ind.; M. Raymond, Dayton, Ohio; C. J. Devilbiss, dispatcher, Fred Kiesel, chief engineer, and C. Schade, superintendent, Wabash, Frisco & Pacific Assn., St. Louis.

Johns-Manville *Aquadam*® Built-Up Roofs—proved superior by actual tests!



Here's conclusive proof of Aquadam's greater resistance to cracking!

TOP—A typical asphalt is shown at average breaking point of 12 CM.

BOTTOM—This is Aquadam at a 25 CM stretch—100% beyond average—won't break even when stretched to 110 CM.

AQUADAM BUILT-UP ROOFS owe their proven superiority to Aquadam, the special bituminous cementing agent, used in the application of the roofing felts. Aquadam is an exclusive Johns-Manville development.

When applied, Aquadam's excellent adhesive properties create a permanent bond to the felts and to the slag or gravel surfacing. Aquadam's rigidly controlled quality and excellent flow properties assure easier mopping, thorough coverage, longer roof life.

Johns-Manville Aquadam Roofs are specially designed to provide maximum built-up roof service for deck inclines from dead level to ½" per foot. Available in both a smooth-surfaced and a slag or gravel specification.

Your local Approved J-M Contractor is listed in the Yellow Pages of your telephone directory. He will gladly give you complete information about J-M Aquadam Built-Up Roofs. Or, write Johns-Manville, Box 158, New York 16, N. Y. In Canada: 565 Lakeshore Rd. E., Port Credit, Ont.

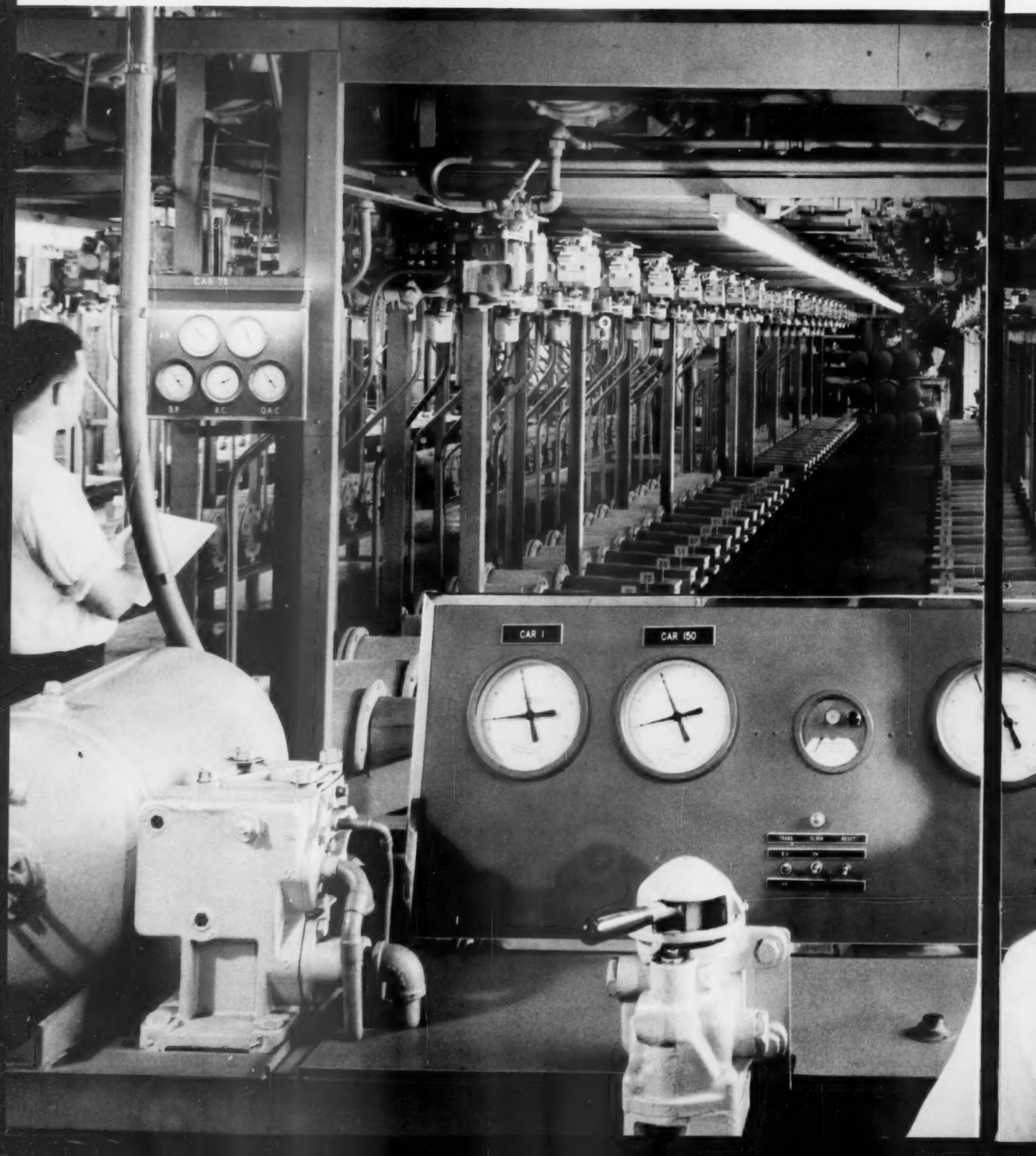
JOHNS-MANVILLE JM PRODUCTS

CHECK THESE 7 IMPORTANT AQUADAM ADVANTAGES:

- ✓ Outstanding resistance to cracking
- ✓ Improved self-healing properties
- ✓ Superior weather resistance
- ✓ Greater kettle stability
- ✓ Exceptional adhesion, stronger bond
- ✓ Greater resistance to water
- ✓ Excellent uniformity

Johns-Manville

This experienced railroader



taught us something

HE CAME TO WILMERDING for a few weeks last fall, fresh from railroad service, to take part in Westinghouse Air Brake Company's Clinic for Supervisory Personnel. In the process we *both* learned, from each other.

He gained a more complete knowledge of the design and operation of air brakes and other pneumatic railroad equipment. He went back to his job—perhaps on your railroad—better equipped to cope with air brake operating and maintenance problems.

We, in turn, learned from him some of the new problems that are encountered. And we were reminded of some of the old problems and their solutions. We learned more about the part air brakes play in your operations and the part we can play in improving them.

This exchange of ideas and information takes place every time a Westinghouse Air Brake man and a railroad man get together. The results are measurable in greater safety and faster scheduling through improved operation. That's why we like to get together often with railroad men.

Westinghouse Air Brake
COMPANY
AIR BRAKE DIVISION WILMERDING, PENNA.

Test Rack used in Air Brake Research

New train is sleek . . . low . . . light. Jet Rocket highballs along Rock Island's tracks. Gleaming stainless steel body and strong USS T-1 alloy steel underframe both contain nickel and contribute to a safer and lighter, modern train.

Cars built with steels containing nickel

The iron horse gets its second wind

It's here! The proven Talgo, backed by over 1,000,000 miles of service in Spain . . . it's Rock Island's "Jet Rocket." Built by American Car and Foundry Division of ACF Industries, its design promises to revolutionize American railroad passenger travel.

Nickel has a vital part in this. The modern Jet Rocket costs less to build, and its light weight, low center of gravity and speed mean it costs less to run and maintain.

The Jet Rocket, like most other new lightweight trains, is sheathed in gleaming stainless steel. For with nickel this alloy is strong, tough and corrosion resistant. Cars can carry more pay load per square foot and always look clean.

Nickel is also an essential alloying element in the high-strength USS T-1 steel used in the under-frames of the Jet Rocket. Every pound of alloy steel does a bigger job, because, pound for pound, such steels are stronger, more resistant to impact, and offer clear-cut weight savings.

Do you have a problem involving metals? Are corrosion, high temperatures, stresses, or fatigue causing trouble? Let's talk it over. We may be able to find out how nickel or a nickel alloy can overcome it.

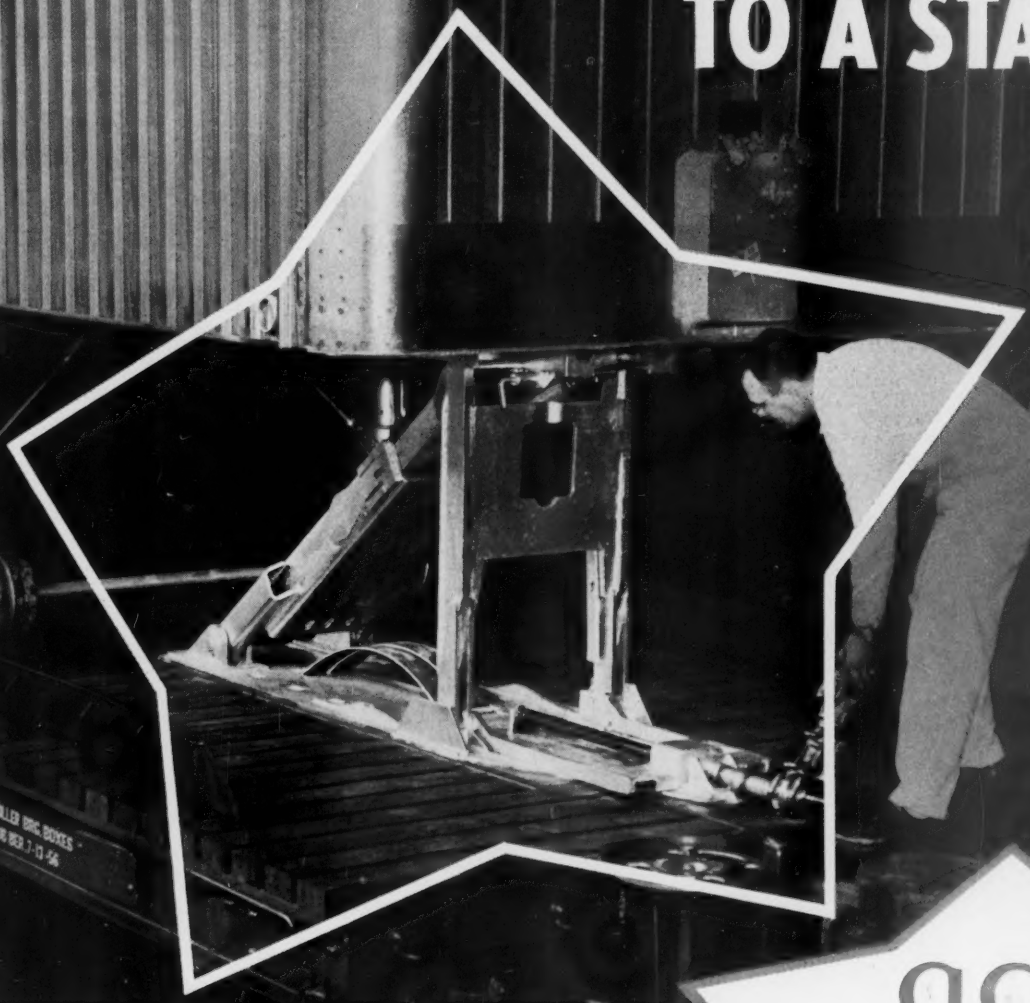
* * *

Write for "List A" of available publications. It includes a simple form that makes it easy for you to outline your problem for study.

Nickel Alloys perform better, longer

INCO TRADE MARK **THE INTERNATIONAL NICKEL COMPANY, INC.** 67 Wall Street New York 5, N. Y.

HITCH YOUR TRAILER TO A STAR!



acf

sets the pace in railroad equipment

It's a star performer on all counts: more secure tie-down, more lading protection, and six times *faster* tie-down!

One man raises and locks the ACF Retractable Trailer-Hitch in less than three minutes, using nothing more than a portable power wrench. Locked to the "fifth wheel", the ACF Trailer-Hitch holds the trailer more securely than any other method, protects it and its cargo with 40,000 foot-pounds of cushioning capacity. Hitch retracts to 8-inch height for loading and unloading.

Savings in man-hours and terminal time, security that permits unrestricted interchange of trailers-on-flat-cars, and safe, simple operation give the ACF Retractable Trailer-Hitch top billing in railroad-trailer service all over the country.

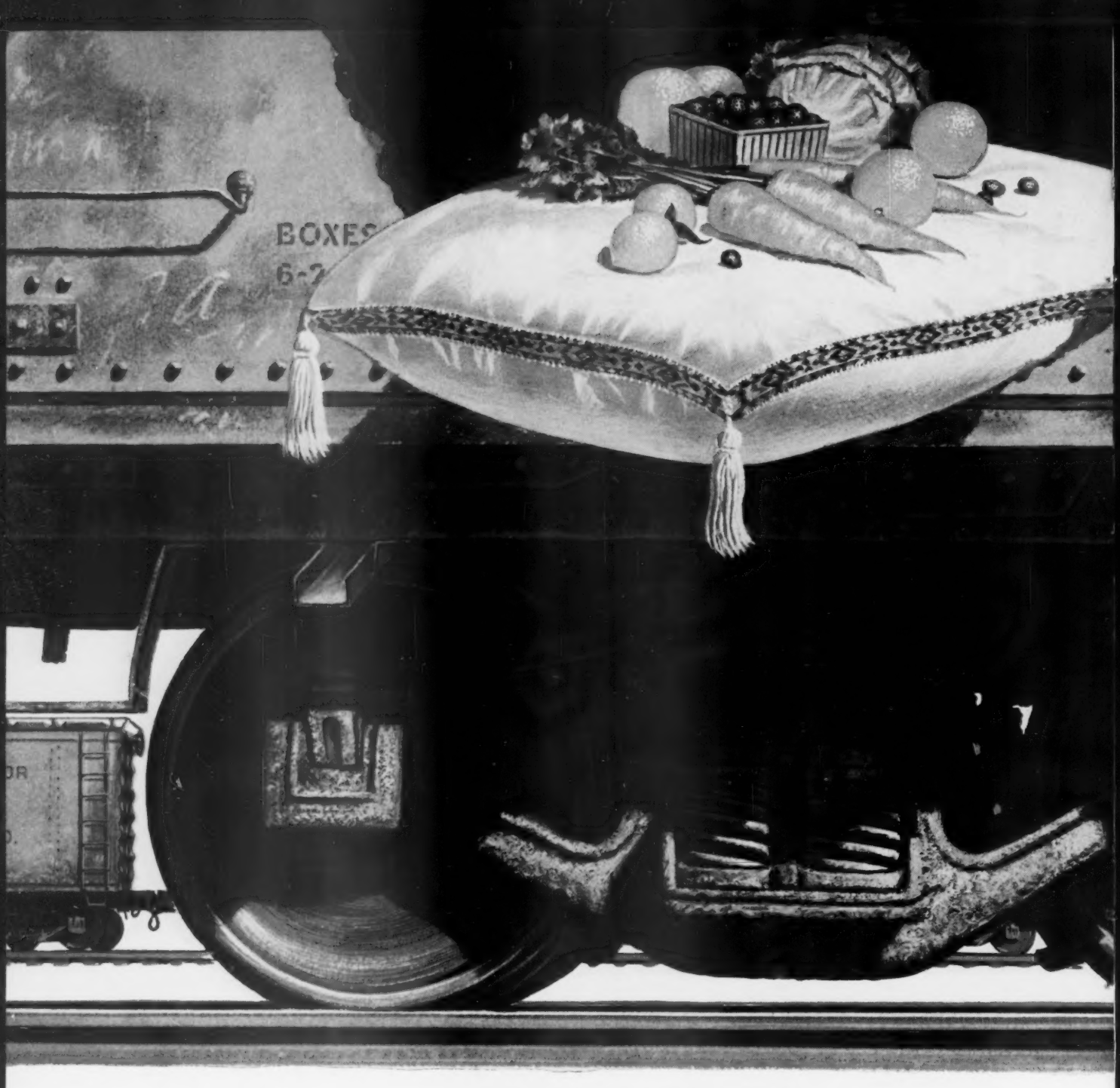
Available now for installation on present equipment, ACF standard flat cars and ACF ADAPTO cars. For full information, design details, specifications, price and delivery, contact your nearest ACF sales office.

acf

AMERICAN CAR AND FOUNDRY

Division of ACF Industries, Incorporated, 30 Church Street, New York, N.Y.

Sales Offices: New York • Chicago • St. Louis • Cleveland • Washington, D.C. • Philadelphia • San Francisco.
Plants: Berwick, Pa. • Huntington, W. Va. • Milton, Pa. • St. Charles, Mo. • St. Louis, Mo.



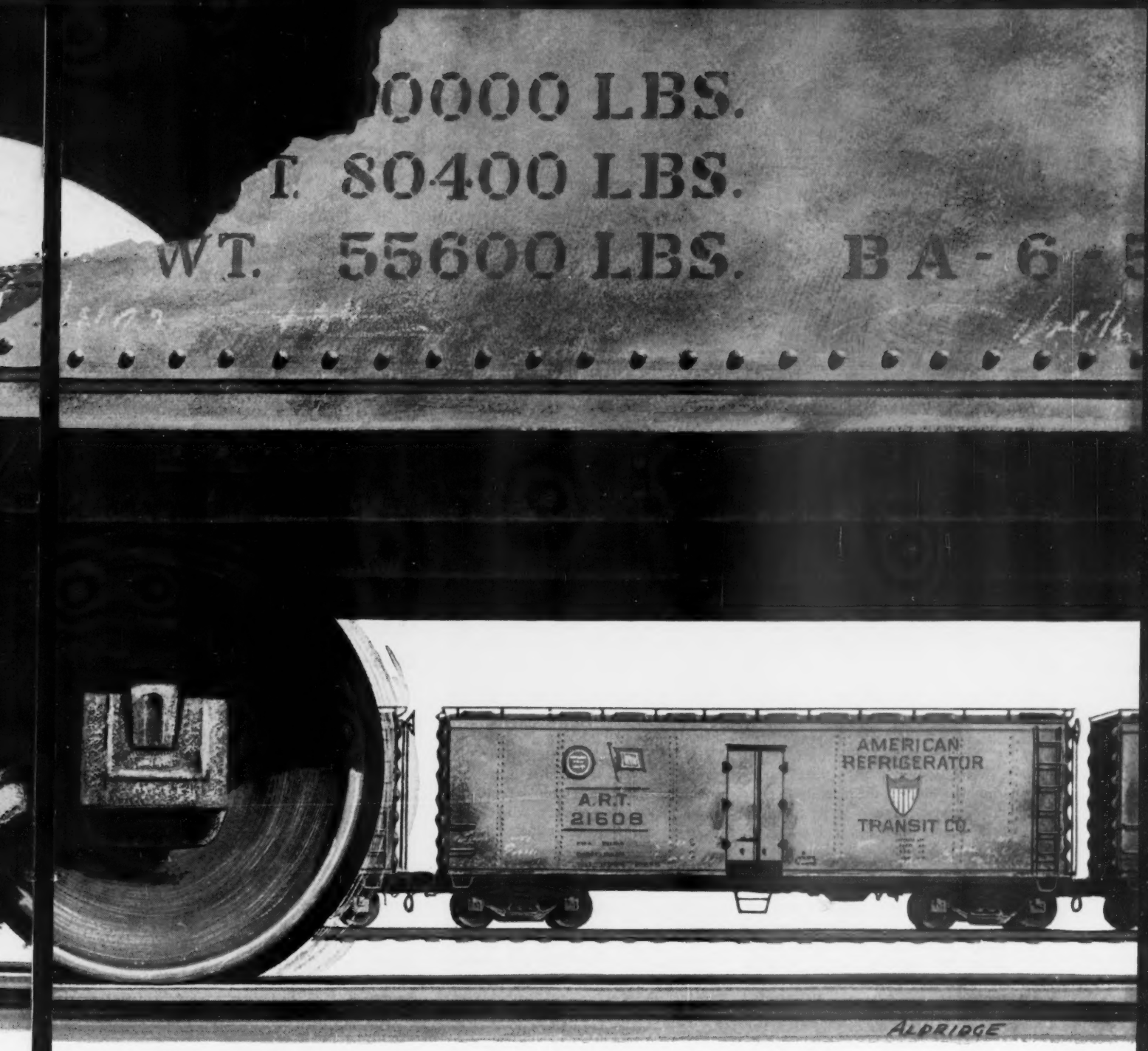
On the A.R.T.
THEY WHET YOUR APPETITE

At any fruit or vegetable counter, the biggest sales-builder of all is the "just-picked" look. That's why the A. R. T. Company has done such a topflight job of providing cars that ride smoothly at higher speeds . . . to bring produce from the orchards and farms to your dinner table safely and quickly.

Is this good service possible only with new cars? Not at all. Older cars—with trucks dating back to the pre-Ride-Control era—are simply brought up to modern riding standards with ASF Ride-Control Packages. Change-over takes only a few minutes and the investment is small—practically nothing, in fact, compared with the way *improved service* retains and *regains* freight revenues.

Safe, prompt arrival of *any* commodity carried on the rails is just as important and desirable as a fresh-looking orange! Further tests on your road will prove how Packages can help you increase *profits* . . . through greater car utilization, better service, fewer damage claims.

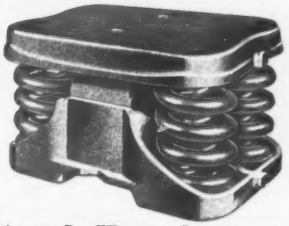
Now is the time to make smooth riding another objective of your general repairs program!



WITH SMOOTH-RIDING CARS!

NOW . . . all ASF Ride-Control Packages are fitted with Extended Life Springs

In appearance, these springs look like any standard truck spring . . . but tests prove they average at least 10 times longer life! Ride-Control Packages offer you a quick answer to smoother riding—and an answer to costly spring failures and replacement.



Bring your older cars up to modern riding standards . . . with

GEARED TO PROGRESS
RPI MEMBER

ASF Ride-Control Packages

AMERICAN STEEL FOUNDRIES
Prudential Plaza, Chicago 1, Illinois
Canadian Sales: International Equipment Co., Ltd., Montreal 1, Quebec

Why It's Hard to Hire Young

With American industry advancing in technology at a rapid pace, railroads are finding it harder and harder to obtain the technically qualified and trained men they need. Why? To find the answer, Railway Age surveyed railroad men, educators and college seniors and came up with some interesting facts.

Today's college graduate is looking for something more than money. What is this "something" that the railroads apparently lack?

Railroads do not, in general, offer beginners the salaries that are being offered by, for example, large aircraft corporations. The salary situation has reached the point where railroads are being forced, in some cases, to pay a newly graduated engineer more than they pay men of similar training with years of practical experience. The average starting salary for graduate engineers today is estimated in the neighborhood of $5,600 yearly. Often, first-job offers promise salaries in excess of $7,000. Many persons acquainted with the problems of hiring technical personnel in the railroad industry say their major stumbling block is the inability to offer such salaries. While it is conceded that salary is of great importance, other factors, too, enter into the picture.

A number of college seniors were interviewed to find out why they apparently shy away from railroad job offers. Money was mentioned, but it is not the dominant factor. Security, an important consideration with college graduates following World War II, no longer is considered as "too important." As one prospective graduate put it: "From what I've been able to find out, the railroads don't offer the creative opportunities I want. I've talked with railroad engineers who've come to the campus; I've talked with friends who work for railroads. All they do is maintain. There's nothing left to be built."

This certainly appears to be one important factor. Take the newly graduated civil engineer, for example. He has been trained in the complexities of structural design, higher mathematics and other subjects of a highly technical nature. If he takes a position with a railroad, he finds that before he can put much of his specialized knowledge to work, he must spend months—even years—learning the practical aspects of railway maintenance and engineering; how to tamp a tie; how to lay rail; how to surface track; and so forth.

By the time he has advanced to a position of responsibility, where he can apply his knowledge of, say, higher mathematics, his abilities in this direction have diminished somewhat through disuse—or so he fears.

This lack of early creative opportunity in railroading was observed by the placement director of a large university. "I'm having somewhat the same trouble right within my own department," he stated. "I get trained personnel men in here to help these kids get good jobs, and what happens? They soon see that it is, in a sense, a 'buyers' market.' They quit and join some industry where they can make better use of their talents."

"Pioneering" Not Dead

Railroad men, in dealing with this objection, are attacking it from several sides. In interviews with prospective technical graduates, they are pointing to the continuing research the railroads are carrying out in literally all phases of engineering and technology. Perhaps, they say, the railroads have stopped, to some degree, building new lines and great, impressive structures. But they are still building—building new methods, new techniques, new theories to solve the problems of better and more economical operation. They are pointing out that insofar as technological progress is concerned, the railroads are certainly not lagging.

Railroaders and educators agree that acquisition of practical knowledge — as opposed to theory — by young engineers presents what is, perhaps, the greatest problem. Many roads have set up training programs wherein the newly hired engineer spends 12 to 36 months in observing and participating in various phases of maintenance, design, accounting, communications and surveying work. These programs, it has been found, are functioning well in providing the "down-to-earth" know-how which is so badly needed. The turnover, however, in such programs is great. Often, before he has completed the training program, the young engineer will become discouraged and find employment elsewhere.

Cooperate to Educate

Another approach to this problem is the practice of so-called "cooperative employment." Under this system, a student may work for a railroad during the summer term, or sometimes longer, thus alternating his college training with practical experience before he obtains his degree. There are several variations of this practice in operation. Under some arrangements, the railroad agrees to pay all or a portion of the student's tuition and other expenses in return for a guarantee that the student will, upon graduation, join and remain in the employ of the railroad for a specified time.

At some institutions, attempts are being made to give students practical training in railroad maintenance-of-way practices, for instance, as a part of the specified railway engineering curriculum. This practice, in general, however, has been found to have limitations.

The "Sales Pitch"

Railroad practices vary in the methods used to interview prospective technical personnel. Many roads, each spring and fall, send their representatives to the college and university campuses for placement interviews. Opinions differ, in some cases, as to just who should represent the rail-

Engineers

road in these interviews. Some roads handle such assignments entirely through their personnel departments. Others send representatives of their engineering, mechanical, signaling and communications departments. Still others combine the two methods and send teams of personnel and engineering men.

College students, when queried, said they would rather talk with engineering people: the men in the positions they might someday hold themselves. Several of the students interviewed said that they much preferred to talk with younger men. "Some of these older men," one student pointed out, "have been in the railroad field since the days when a graduate engineer was something of a rarity. We'd rather talk to one closer to our own age, one who has himself been sold on railroading as a career not too long ago."

Get 'em Young

Another effort being made on the part of the railroads to secure technically trained personnel is the establishment of an educational program using films and other devices to promote interest in railroading among potential engineers. These films, many of which have been accumulated by Committee 24—Cooperative Relations with Universities—of the American Railway Engineering Association, are shown to youths in the high school—even in the grammar—grades. The objective is to create an interest in railroading among young people—an interest which, some claim, is potentially present in all young people.

Practically all of the railroad associations have set up committees or study groups to analyze the problem of recruiting personnel. So far, success in the solution of this problem has been moderate. The big test of the methods now being tried will occur in the years to come. Railroad officers, along with officers of all types of industry, are wondering when, if ever, the present extreme demand for technical personnel will cease. Meanwhile, the question naturally arises: Are college graduates needed for all of the jobs they are filling on the railroads today?

SIGNING UP for interviews with employers, this year's engineering graduate can choose from wide ranged offers.

When this question was first asked, the immediate reply from all quarters of the railroad industry was a resounding yes. Yes, and then some. But, when faced with the stark reality that there just aren't enough engineers to go around, railroad men take a second look at the situation. The result may be the establishment of a wholly new concept of training.

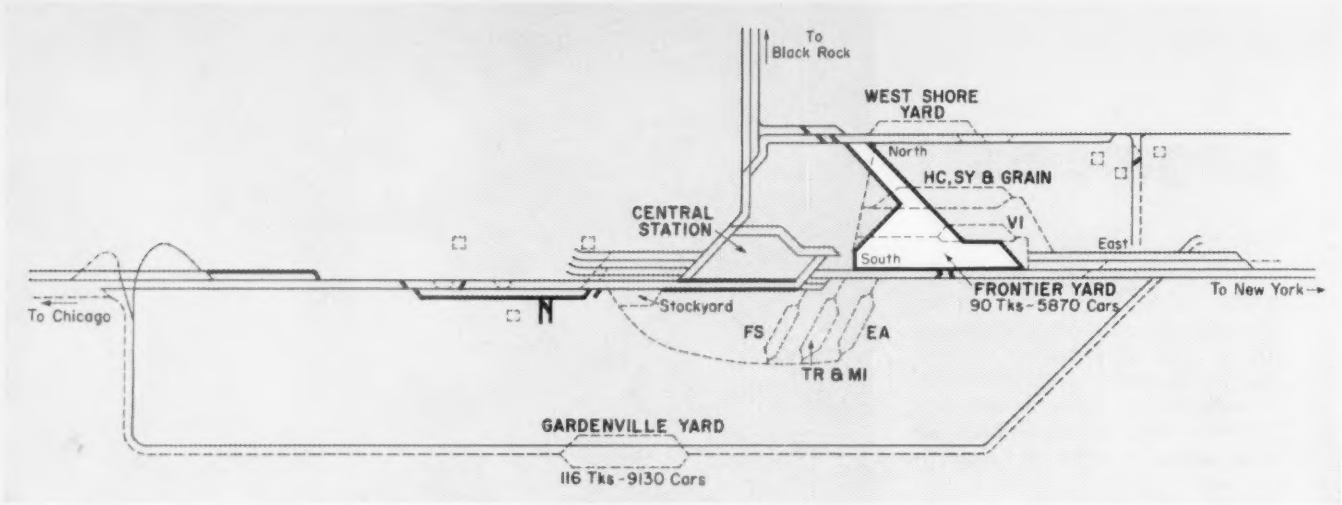
A Place for Technicians

Railroads and many other industries are closely examining their personnel requirements and are finding that, perhaps, certain technical jobs do not require the talents of college graduates. This has led to the formation of a new group, called "engineering technicians." The engineering technician is a specialist. His training is such that, working with competent engineers and scientists, he functions as an important member of the technical team.

At this writing, there are at least 14 schools in the United States which offer technician training in the areas of railroad work often performed by graduate civil engineers. These and other schools are also offering training in the mechanical, electrical and chemical fields. Some 14,000 trained engineering technicians were graduated from various technical institutes in 1956. It is expected that this number will rise annually and will greatly alleviate the present shortage.

Railroad men realize they have a big selling job to do in recruiting technically trained personnel into the industry. Success in this venture against high-priced and high-pressure competition is not easy to come by.

The chief engineer or the personnel manager of a railroad, having just successfully recruited a promising group of young engineers into his company, may sigh with satisfaction, but he realizes that his work in this direction has just begun. Now he must work just as hard, or harder, to keep these men in his organization, in the face of all the intense competition for technical talent.



BUFFALO SHUFFLE lets New York Central replace 8 yards with 1. Dotted lines show yards and trackage removed, and heavy lines block in the new. It's a big move as . . .

NYC Streamlines a Key Terminal

Last Thursday, New York Central's President Alfred E. Perlman opened that road's new $6,000,000 retarder classification yard at Buffalo. Known as Frontier yard, it was constructed in the short span of eight months, and has been humping cars since Dec. 20 last year.

Frontier is the first of three new automatic retarder yards being built by the Central to reduce yard congestion, delays and operating expenses. The other yards under construction are at Elkhart, Ind., and Youngstown, Ohio. Also contemplated is modernization of existing yards at DeWitt (Syracuse) and Selkirk (Albany).

By investing six million dollars net (after salvage) in Frontier yard, the NYC will realize annual savings of over $4 million, or a return on investment of 72 per cent.

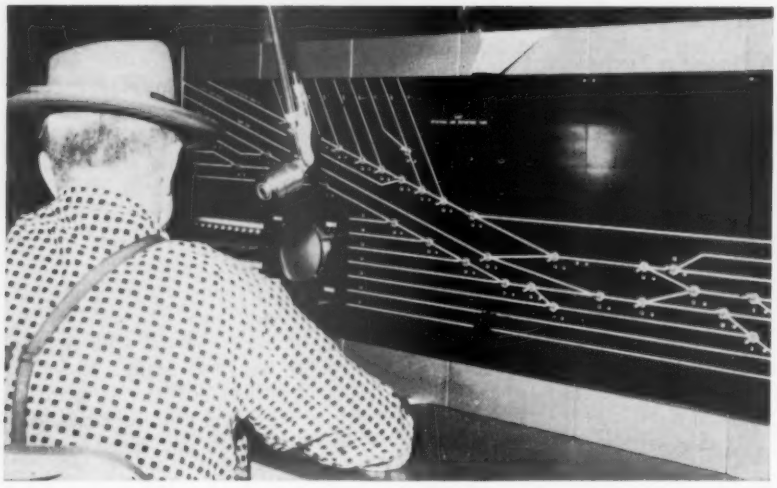
The new yard replaces eight yards in the East Buffalo-Gardenville area (map), which handled some 3,000 cars daily (switched to 240 industries, interchanged with 8 other railroads, and classified for road movements). A freight car formerly averaged up to 27 hr getting through Buffalo, but this is being cut to around 7 hr by putting all cars through the new Frontier yard.

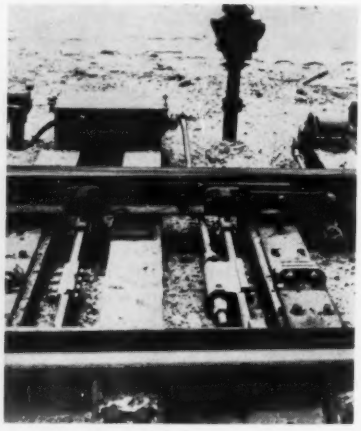
Track and signal changes concurrent with the new construction have sharply improved train operations. All main tracks are now signaled for movement in both directions, and in one area 10-mph slip switches were replaced with 30-mph crossovers, thus expediting movement of the 36 passenger trains and 33 freight trains daily.

Headquarters

Focal point of Frontier yard is the assistant general yardmaster's top floor office in the hump tower. He is responsible for overall yard operations, and specifically in command of classification work. The hump conductor who sets up routes for cars is

Trains Arrive and Depart Without Stopping





SWITCH TENDER in hump tower office has control of electric switches along ladder tracks and hump leads. Train moves are authorized by radio or talkback speaker.

in a ground floor office which fronts on the crest. The retarder tower is by the group retarders in the classification yard, and the west end yardmaster tower houses the yardmaster responsible for make-up and departure of trains.

Frontier yard has north, south and east receiving and departure yards totaling 27 tracks, 2,740 cars capacity. The 63-track classification yard consists of seven groups of nine tracks each, totaling 3,110 cars. Also included at Frontier are diesel engine servicing facilities and shop, and car repair and cleaning areas.

What's New at Frontier

Freight car classification here is generally no different from that at other yards, but several new devices and practices are incorporated. For example, an automatic **lid lifter** on the approach to the hump lifts the lids of journal boxes so that oil can be squirted into them by the **automatic oiler.**

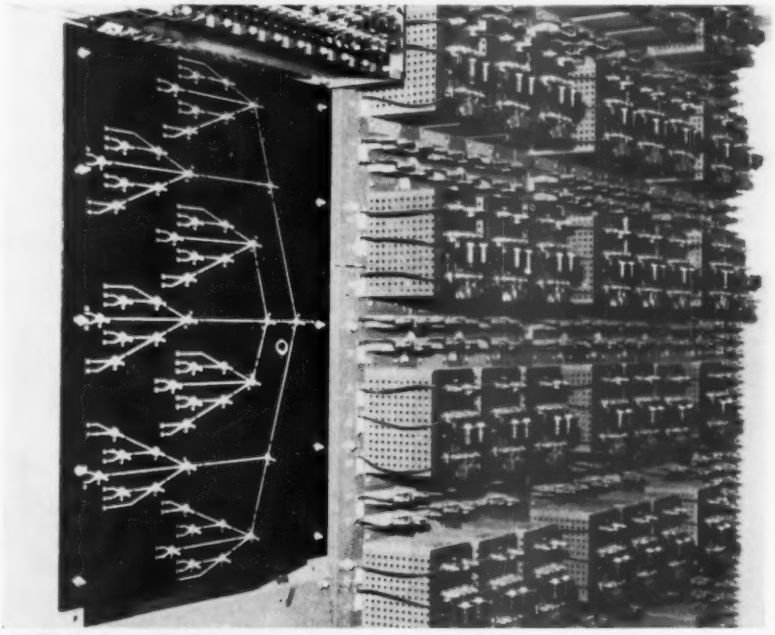
A 16½-ft **slack retarder** just beyond the hump crest is controlled by the hump conductor. By means of this retarder he can hold cars to get slack for pin pulling.

To keep coupler knuckles open, a Celotex **knuckle wedge** is "shot" from an air gun so that the cuts or cars will couple onto cars already standing on the classification tracks.

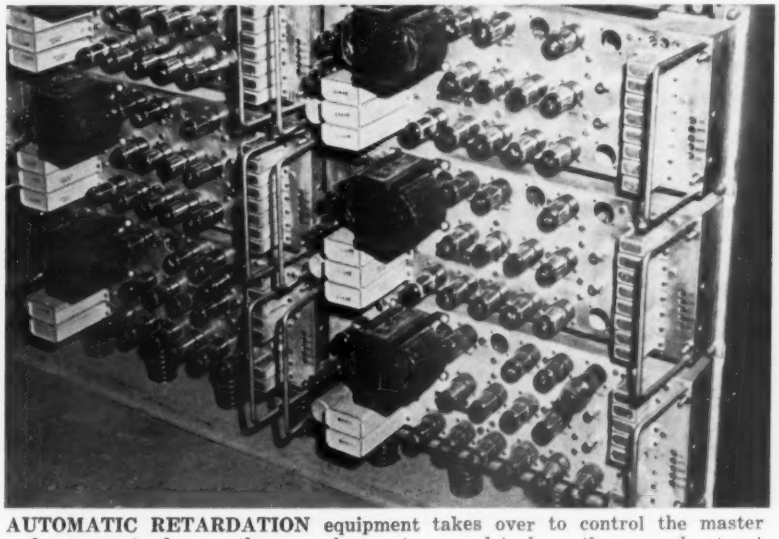
Retardation Is Automatic

In this installation, the retarder operator sees only the classification track number of the car approaching the master retarder, because this was thought to be less confusing than if he saw all four routes that were "punched up" by the hump conductor. The General Railway Signal Company automatic retardation system functions to set cars rolling down classification tracks so that they couple at not more than 4 mph. West winds often blow over this east-west yard (bringing heavy snow in the winter) to provide abnormal operating conditions. To modify retarder operations under these conditions, the retarder operator can control retarders to let cars leave at increased or decreased speeds.

AUTOMATIC CLASSIFICATION of cars at Frontier yard occurs once the hump conductor punches up track numbers on his panel of the . . .



AUTOMATIC SWITCHING equipment. This "brain" correctly controls switches so that cars are routed to the proper track. To control their speed . . .



AUTOMATIC RETARDATION equipment takes over to control the master and group retarders so that cars leave at a speed to have them couple at not more than 4 mph.

What's New Here in Communications

Selective Calling

MAN IN YARD can call any of four offices by pressing speaker pushbutton a specific number of times. Direct intercom circuit is set up on this classification yard system.

Assistant General Yardmaster

Lead Car Inspector

Retarder Operator

West End Yardmaster

How the System Operates

To page a supervisor from a point out in the yard, a man goes to the nearest speaker, presses and holds the pushbutton, speaking toward the speaker. This speaker acts as a microphone, and all others act as speakers, which reproduce his voice. If our man in the yard has a "Dick Tracy" radio transmitter, he can page by pressing the transmitter button and speaking into his set. His voice is "picked up" by one of two receiving radio stations, which put it out on the talkback speakers in the yard.

To call one of the offices, a man in the yard goes to the nearest speaker and presses the pushbutton a certain number of times: 2 for lead car inspector, 3 for west end yardmaster, 4 for assistant general yardmaster and 5 for retarder operator. A short tone over the speaker indicates that the circuit is not in use and that the office has been signaled. After signaling, the man releases the pushbutton.

The person called will reply, his voice coming out over all speakers in the circuit. The man in the yard, at the same or any other speaker, then presses and holds the pushbutton, which completes a direct "intercom" circuit between that speaker alone and the man in the office called. When they are finished talking, the man releases the speaker pushbutton, making it available for normal operation.

If the man in the yard has a "Dick Tracy" transmitter, he would press the transmit button the same number of times as if he were signaling from a talkback speaker. Again his voice would be picked up by the radio receiving station and put on a wire line circuit into the office called. The man in the office answers by paging over the talkback speakers.

The system just described, known as the **"red"** system, is primarily used by the car inspectors. Four other talkback speaker systems in Frontier yard are identified by color: **blue** for the west end yardmaster, the speakers being along ladder tracks at the west end of the classification yard and north receiving and departure yard; **green** for the diesel shop and engine service system; **brown** for the car repair area system; and **black** for speakers along ladder tracks at the east end of the north and south receiving and departure yards and at both ends of the east receiving and departure yard.

C&NW TESTS LEAD TO . . .

Thumbs Down on 'Economy Fuel'

After thorough study and analysis of results of a full scale diesel locomotive test, averaging 8-9 months duration on six units, Chicago & North Western officers have decided that the disadvantages of using a lower grade fuel quite outweigh any advantages gained.

They further say that future use of lower grade fuel is not being considered, and they will use the grade of distillate specified by the manufacturers of the engines.

The tests were run to explore the potential use of a lower grade fuel at a reduced purchase price, considered against diesel engine performance.

Some of the disadvantages found with the test fuel are instability of the fuel and increased maintenance, due to greater wear and deposits in the engine. There also appeared to be a definite interrelationship between the quality of the fuel, lubricating oil deterioration and consumption, and locomotive operating efficiencies, engine wear and deposits.

How the Tests Were Run

In April 1955, the North Western placed in test service six General Motors units—four operating as two locomotives using the "economy" test fuel, the other two operating as one locomotive using regular fuel.

Each unit is powered by an EMD 16-cylinder, V-type, 2-cycle diesel engine Type 16-567B, rated at 1,500 hp available for traction. All parts of the engine were standard as specified by the manufacturer. Two completely new or reconditioned assemblies were applied to each engine in opposite banks, the No. 7 and No. 15 positions, at the same crank location.

These units were used in pool service operating in tonnage road freight service over relatively level terrain, with a maximum gradient of approximately 1.26%, with many curves.

The locomotives handled tonnages ranging from 1,900 to 6,500, and maintained average speed of 30 mph, with a maximum of 45 mph. Sanding was used under power and when braking. Special fittings were installed on the fuel tanks of units using the test fuel so that mixing with any other fuel could not occur.

The crankcase lubricating oil used was a regular heavy-duty detergent type, SAE No. 40.

Fuel oil used on test was a 100% catalytic cracked No. 4 oil from the newly developed Fosteron fields in Dakota and Canada, refined in Casper, Wyo.

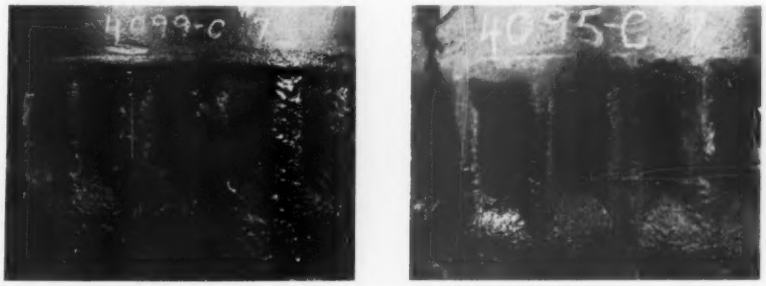
For comparison, the regular No. 2 fuel oil was used, to C&NW specifications.

Test History. Before starting the test, all engines operating on both test and regular fuels were inspected and found to be in normal operating condition. During the test each engine was examined at three month intervals. Where lacquering was noted engines were examined as frequently as one month intervals. These examinations included inspection of lubricating oil filters and strainers, fuel filters and air filters.

Air box inspections were conducted to determine intake port deposits, appearance of piston crowns, condition of rings, piston skirts and liners, and general engine cleanliness. Significant deposits were found on both test and regular units. More deposits were found in the test engines throughout the tests than in the engines using the regular fuel.

Lubricating oil filters were changed semimonthly. Fuel oil (pressure and suction), carbody and engine intake air filters were changed monthly.

Engine Modifications. At the beginning of the test, the power pistons in the test fuel engines were changed from 11/32 in. to 3/8 in. in order to compensate for the higher Btu fuel. In engines using the regular fuel they were left at 11/32 in.



CARBON DEPOSITS showing about 20% closure of cylinder liner intake ports is a typical condition in test fuel units (left). At right is regular unit.

HEAVIER DEPOSITS of carbon and lacquer showing typical condition of piston in test fuel units (above), and regular fuel units (below). There was no appreciable wear in outside diameter in any of the units.

Since lacquer deposits were forming at a higher rate in the test engines, changes were made on October 10, 1955, in an attempt to alleviate this condition. On the four test units, the fuel injection timing was changed from 4 deg before top dead center to 6 deg. On two of these units, fuel oil filters were applied to detect any advantages as compared with the other two units. The rate of varnish deposits decreased as a result.

On October 26, 1955, after an engine inspection, it was concluded that the inherent unstable nature of the test fuel required a stabilizing additive which was added to all test fuel used until the end of the test.

How the Tests Came Out

Effect on Operation. Locomotive availability was somewhat affected by the use of the test fuel, but in general all six units fulfilled their assigned work schedules during the test period.

Effect on Engine Components. Piston discoloration and deposits were higher on the test fuel pistons than the regular fuel pistons. Ring groove deposits were heavier on pistons operating on test fuel, with deposits in all cases being carbon deposits. There was an average wear of .001 in. on the outside diameters of the pistons used on the fuel tests.

Top piston ring wear in the test units was greater than the regular units, being .041 in. against .028 in. On the No. 2, 3, 4 and 5 rings, the wear was approximately the same in all units, averaging .013 in. There were no broken rings during the test and no evidence of stuck rings. All rings were free at termination of test.

Cylinder liner average wear was greater in the test units, but the difference was small. In general, the lacquer deposits were considerably heavier on the inside bore of the test liners. Slight flaking occurred.

Deposits on the cylinder liner intake ports averaged considerably heavier on the test units.

Piston carrier bushings and thrust washers were normal in appearance and wear was low on all units.

Piston pin bushings were normal in appearance on the regular fuel units, with very little wear on all units. Several assemblies on the test units showed slight scoring.

Piston pins on all units showed very little wear. Piston pins on the regular units were normal in appearance, but on the test units some of them had circumferential deposits of oxide film.

All cylinder heads were in normal condition, with very little deposit in valve seat and exhaust port areas.

All exhaust valves were normal in appearance and showed slight carbon deposits on shoulders and some lacquer on stems.

No serious injector trouble was experienced during the test. Carbon build-up on the injector tips was approximately the same on all units, with no injector sticking. All racks remained free. No excessive wear was found on parts of injectors using both test and regular fuel.

There was no noticeable difference in the performance of the lubricating oil and lubricant filters.

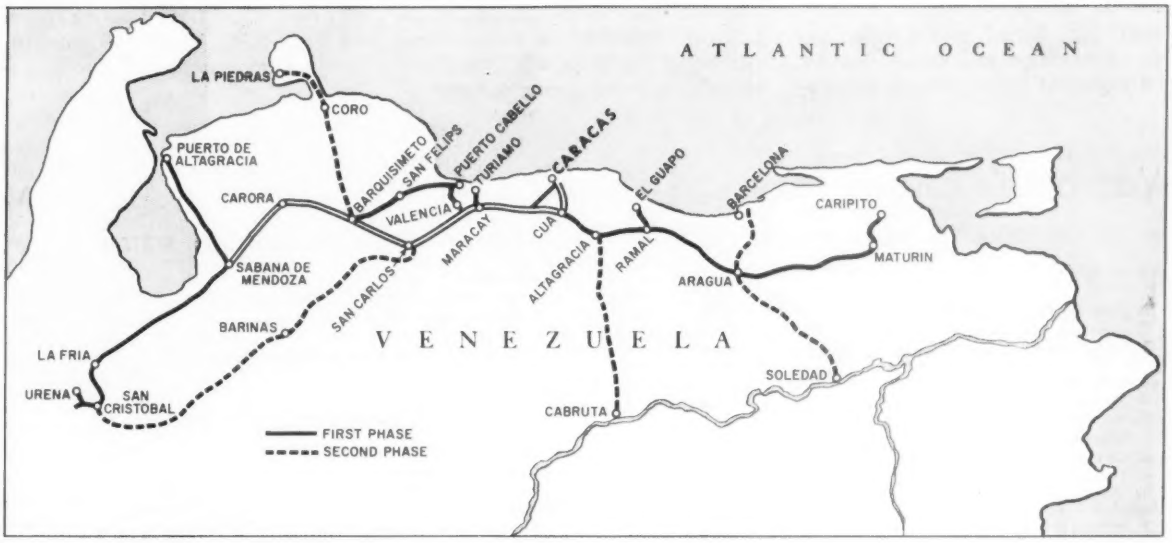
The test fuel reflected a higher rate of crankcase lubricating oil deterioration, indicated by changes due to oxidation, additive depletion and increased oil consumption. On the two units using regular fuel, two changes were made, one due to oxidation. Of the four units on test fuel, a total of 9 changes were made, three due to oxidation and one to additive depletion. Others included fuel and water leaks.

TEST RESULTS IN BRIEF

	*Test Fuel***	*No. 2 Regular*
Duration of test	8.3 mo.	9.0 mo.
Total miles of unit	142,240	95,638
Average miles per unit	47,413	47,819
Total fuel used, gal	318,530	
Average gallons fuel per unit	106,177	
Gallons consumed per mile	2.24	
Approx. hours of idle per day	9	9
Approx. hours of load per day	15	15
Average miles per unit, month	5,712	5,313
Avg. fuel consumption (gal. per unit month)	12,792	
Avg. fuel consumption (gal per rated hp/mo.)	8.5	
Average tonnage per two units	3,600	3,600
Average maximum tonnage	6,500	6,500
Average minimum tonnage	1,900	1,900
Lubricant consumption per unit, gal	1,148	569
Make-up lubricant consumption (gal per 1,000 unit-miles)*	13.6	7.4
Number of lubricant changes per unit	2.3	1.0
Number of lubricant filter changes per unit	17	18
Number of locomotives involved	1½	1
Number on units involved	3	2
Number of diesel engines involved	3	2
Number of measured power assemblies involved	6	4

*Excludes oil changes

**Data of three units only, because of one unit failure during test.



VENEZUELA IS BUILDING 2,637 MILES . . .

Railroads Instead of Truck Roads

The government of Venezuela has under way a 10-year program to build and equip 1,515 miles of railroad, to be followed by a second 10-year program of 1,122 miles. This national railway plan was advocated and developed by the Venezuela Railway Administration, headed as general manager by Dr. Gonzalo Cardenas Faria.

Under this plan (outlined in Railway Age, Nov. 8, 1954, p. 17), the railroads are to be located to perform services for which they are best suited economically—the movement of heavy and long distance freight, and for those passenger services where railroads have a distinct advantage. Thus the railroad plan is based on coordination with other forms of transportation, rather than on competition where those forms have an economic advantage.

Dr. Cardenas Faria advocates the railway as a means of reducing the total capital required for a coordinated transportation system. He takes the position that the costs of highway construction and maintenance can be greatly reduced by using railways for the traffic which can be most economically handled by rail.

He cites the very high cost of highways designed for heavy truck operation, as revealed by studies, one of which indicated that about 26,000 miles of road designed for passenger vehicles and light trucks could be built for less than the cost of 737 miles of superhighway designed to carry the heavy vehicles. He also pointed out that the damage to roads multiplies very rapidly with only slight increase in truck gross weight. He is firm in his conviction that the complete national transportation economy would best be served by having the railroads as the backbone of the system to do the heavy work, and that an extensive rather than an intensive highway system would do more to advance the industry and agriculture of the country.

Informing the Public

Because the entire economy of the country is, to a large extent, under careful study and planning, and because Dr. Cardenas Faria is such an advocate of the railroads, though open-minded as to the advantages of other forms of transport, it can be expected that Venezuela will emerge with a well-balanced transportation system best suited to its economic growth. There are, however, zealous advocates of the intensive highway system, so that it is necessary for advocates of the railway plan to keep their case constantly before the public.

In a recent address at Barquisimeto, Dr. Cardenas Faria discussed the railroad program, especially the first section to be built, which is the 109 miles between Barquisimeto and Puerto Cabello on the seacoast.

When the railway plan was adopted by the government in 1951, the Railway Administration made an agreement with an American engineering firm for a detailed study of sections determined to be of first priority. Specifications for the line (Barquisimeto-Puerto Cabello) were developed on the basis of double track. Investigations by Dr. Cardenas Faria of signaling on railroads in North America and South America convinced him that single track, with centralized traffic control, would adequately serve the traffic, and would reduce the original construction costs, especially with reference to imported material.

For example, single track as compared with double track, will conserve rail and other track materials required for 155 track miles, which can be used to proceed with construc-

tion of other proposed lines. Furthermore, the annual saving from reduced trackage maintained will be an important factor in keeping transportation costs down. Union Switch & Signal Division of the Westinghouse Air Brake Company will supply the material and engineering for the installation of the CTC signaling system on single-track, on the 109 miles between Barquisimeto and Puerto Cabello.

Venezuela's Railway Plan

A. FIRST PHASE—BASIC SYSTEM (10-YEAR PROGRAM)

	Km	Miles
Double Track		
1. Caracas, Maracay, Valencia	175	109
2. Valencia, San Carlos, Barquisimeto	250	155
3. Barquisimeto, Carora, Sabana de Mendoza	275	171
Single Track		
4. Sabana de Mendoza, Puerto de Altagracia	160	99
5. Sabana de Mendoza, La Fria, Colon, San Cristobal	435	270
6. Cua, Altagracia de Orituco, Araqua, Maturin, Caripito	700	434
Branches		
7. Maracay, Turiamo	70	43
8. Ramal	25	16
9. San Cristobal, Urena	60	37
10. Valencia — Puerto Cabello	75	47
11. Puerto Cabello, San Felipe, Barquisimeto	175	109
12. Ramal—El Guapo	40	25
TOTAL FIRST PHASE	2,440	1,515

B. SECOND PHASE—SUPPLEMENTARY SYSTEM

Single Track		
1. San Carlos, Barinas, San Cristobal	800	496
2. Barquisimeto, Coro, Las Piedras	400	248
3. Altagracia, Cabruta	310	192
4. Barcelona, Araqua de Barcelona, Soledad	300	186
TOTAL SECOND PHASE	1,810	1,122

TECHNICAL DATA, BARQUISIMETO-PUERTO CABELLO

Track gage: 4 ft 8½ in. (1.435m)
Weight of rail: 100 lb/yard ASCE
Heartwood ties: 8.52 ft by .754 ft by .59 ft (2.60 by 0.23 by 0.18 m)
Distance between ties: Center to center 1.97 ft (0.60 m)
Maximum load per axle: 69,500 lb (31.75 metric tons)
Bridges calculated for TV 69,500 (31.75) Train equivalent to Cooper type E-70
Minimum radius of curves: 982 ft (300m) in mountainous territory
2,620 ft (800m) in flat country
Maximum grade: 1.5%
Maximum speed: 62.14 mph (100 km per hour) in flat country
37.3 mph (60 km per hour) in mountainous territory

Railroading After Hours with Jim Lynch

SERVICE STANDARDS—Almost everybody gets ideas every day for ways to make passenger service more attractive to customers—and a lot of these random suggestions get adopted. The thing that hits me about all this, however, is that a good idea here and another one there aren't quite the same thing as a dependably high standard of service.

For instance, there are some chain restaurants around the country that you can go into and be pretty sure that the pancakes you get in one of them will be pretty much the same article you will get in any other restaurant in the chain.

I just wonder whether some pretty good average standard for all aspects of passenger service isn't even better in its effect on the customers than service which is often extremely good—but which you can never be absolutely sure you're going to get.

For example, I know of a couple of railroads where I have encountered both extremes of service—sometimes excellent and other times decidedly substandard. And I never feel sure, in advance, which one it's going to be.

ADS ON BOX CARS?—Frank R. Stafford of the New York Central at Batavia, N.Y., comes up with an idea which I'm happy to pass along, but which I have some doubts about, myself. It is that the sides of freight cars be used, not just to advertise the owning railroad, but the products being shipped in the cars.

There is, as I recall, some rule against product advertising on cars—and there must have been some reason for it, at the time it was adopted. Does anybody recall the circumstances?

CHAPELS IN STATIONS—One of my editorial associates asked me whether there were any chapels of church organizations in major railroad stations. He seemed to have the idea that some place set aside for prayer or meditation might be appreciated, at least by some people; and perhaps the arrangements could be made by interested denominations without cost to the railroads involved.

I thought I recalled that I had seen a Roman Catholic chapel in South Station, Boston. I checked with the New Haven's Les Tyler on this and he gave me complete information. There is such a chapel. The space was remodeled and furnished by the Boston Catholic archdiocese, and regular rental is paid, just the same as for commercial occupancy.

WHEN PLANES DON'T FLY—Jim Shores of the T&P thinks it might be a good idea to offer the airlines, for purchase, a modest number of standard sleeping cars. They could hold these cars in readiness for "ceiling zero" weather and thus be able to provide dependable alternative accommodations for their customers. Assuming, of course, that the railroads would be willing to handle these cars when offered.

I don't know whether either the airlines or the railroads would buy this one—but it certainly would be easier on the passengers (rail and air alike) than the present set-up, where railroads provide the stand-by service unassisted.

(Continued from page 15)

$2,900; stock, $2,300. On the basis of average annual revenue per dollar of replacement costs, the 1955 figure for box cars was 75 cents. Refrigerators, flats, specials and hoppers averaged between 46 and 43 cents. Gondolas, tanks and stock cars averaged between 37 and 33 cents.

Switchmen Settle With Western Roads

Six months of negotiation and mediation between 14 western railroads and the Switchmen's Union of North America have ended. The union gets a "package" which will cost railroads the equivalent of 26½ ¢ an hour over a three-year period.

The new agreement follows the pattern of contracts made last November with unions representing about 80% of all railroad employees. It contains a clause establishing a moratorium on further negotiation until Nov. 1, 1959.

A first-year hike of 12½ ¢ an hour, retroactive to last November 1, goes into effect for the 8,000 employees covered by the new contract. Further boosts of five cents an hour each will come in November of both 1957 and 1958.

An escalator clause is included, providing cost-of-living adjustments at the rate of a cent an hour for each half-point change in the price index of the Bureau of Labor Statistics. The base of the index is set at 117.1, and adjustments will be made semiannually beginning May 1.

If there is no change in the cost of living by May 1, the employees will get an automatic two-cent an hour increase, effective that date.

Employees of three eastern roads also will be affected by the outcome of the negotiations, which began in Chicago last September 5. Their employers agreed earlier to settle on whatever terms were included in the western contracts.

Financial

Applications

ANN ARBOR.—To assume liability for $1,830,000 of equipment trust certificates to finance in part the acquisition of 300 box cars from Pullman-Standard Car Manufacturing Company—200 of them at an estimated unit cost of $7,667 and 100 at $7,595. Estimated total cost of the equipment is $2,292,887. The certificates would mature in 15 annual installments of $122,000 each, beginning April 1, 1958. They would be sold by competitive bids which would fix the interest rate.

CHICAGO, BURLINGTON & QUINCY.—To assume liability for $7,500,000 of equipment trust certificates to finance in part the construction, in its own shops, of 1,100 freight cars expected to cost $11,337,350. Types of cars involved and their estimated unit costs are: 600 mill-type gondolas, $7,500; 300 box, $8,000; 100 insulated box, $15,400; 50 Airslide covered hoppers, $12,600; 50 all-steel flats, $6,800. The certificates would mature in 30 semiannual installments of $250,000 each, beginning September 1. They would be sold by competitive bids which would fix the interest rate.

Dividends Declared

BEECH CREEK.—50¢, quarterly, payable April 1 to holders of record March 15.

MISSOURI PACIFIC.—Class A, $2, payable April 10 to holders of record March 25, and 75¢, payable July 1 and October 1 to holders of record June 14 and September 13, respectively (payments on this issue last year totaled $2); directors announced their objective is to make future payments on quarterly rather than annual basis.

NORWICH & WORCESTER.—8% preferred, $2, quarterly, payable April 1 to holders of record March 15.

SEABOARD AIR LINE.—62½¢, quarterly, payable March 27 to holders of record March 15.

SPOKANE INTERNATIONAL.—30¢, quarterly, payable April 1, July 2, October 1 and December 13, to holders of record March 6, June 14, September 13 and December 2, respectively; 30¢, extra, payable April 1 to holders of record March 6.

WESTERN MARYLAND.—7% 1st preferred, $1.75, quarterly; 5% 1st preferred, 37½¢, quarterly; 4% non-cumulative 2nd preferred, $1, quarterly; all payable April 6 to holders of record April 3.

Supply Trade

M. A. Hanson, engineer of research of the Gulf, Mobile & Ohio, has been appointed chief engineer of **Magnus Metal Corporation**, at Chicago, succeeding **Lawrence L. Neebe**, who will retire April 1. Mr. Hanson began

M. A. Hanson

railway work in 1928 as assistant chemical engineer of the Alton, which later was consolidated with the GM&O. In 1945 he was promoted to assistant engineer of tests, and in 1948 to engineer of research.

A. J. Reading, general manager at Chicago for **Chipman Chemical Company**, has resigned and the position has been abolished. **Roger B. Coleman**, assistant sales manager at Bound Brook, N.J., has been appointed district manager at Chicago. **J. R. McCambridge**, western technical service manager in charge of weed control at Portland, Ore., has been appointed technical sales representative at Chicago. **D. A. Zanette** has been made district manager at Palo Alto, Cal.

Howard L. Phillips, assistant export manager of **Nordberg Manufacturing Company**, has been advanced to export sales manager, and **Donald R. Johnson**, senior sales engineer of the export division, has been made assistant export sales manager. **George M. Cooper** has been appointed representative for the Railway Equipment division with headquarters at Springfield, Mo. Mr. Cooper was formerly vice-president and manager of **Eastern Railway Supplies, Inc.**, New York, which firm represents Nordberg in the northeastern states and in eastern Canada.

Thomas I. Moore has joined the sales department of **True Temper Corporation's** railway appliance division, as western sales manager at Chicago.

John W. Morris has been appointed representative for the southwestern district of the **Air Brake Division, Westinghouse Air Brake Company**, at St. Louis, where he has been district engineer. He has been succeeded in that position by **Joseph C. Janke**, of the commercial engineering staff at Wilmerding, Pa. **D. J. Price**, who has been connected with the Sao Paulo, Brazil, office since 1952, has been appointed manager of **Westinghouse Air Brake Trade Corporation, Air Brake Division**, for South America, with the exception of Venezuela, Colombia and Ecuador.

Streeter-Amet Company has moved from 4101 Ravenswood, Chicago, to a new plant in Grayslake, Ill. Executive offices and manufacturing divisions are now located there. The new building affords space for increased production and expansion of research facilities.

Frank J. Rossman, of the sales department of **Cincinnati Bickford Tool Company**, a division of **Gidding & Lewis Machine Tool Company**, has been named assistant to vice-president, field sales division, of the parent company. He will undertake special sales assignments covering the product applications of all divisions.

R. J. Olander has been appointed director of the research and development department, **W. H. Miner, Inc. V. S. Danielson**, assistant to vice-president, mechanical, has been named assistant director of research and development.

James L. Holmes has been appointed representative of the **Bird Tie Pad Division** of **Bird & Son, Inc.**, succeeding **John H. Dooling**, retired. Mr. Holmes was formerly assistant maintenance engineer of the New Haven.

William S. Murray, recently retired superintendent of **Pullman Company** operations in New England territory, will head an aggressive promotion of the rail-auto plan of **Avis Rent-A-Car System**.

Dr. Kenneth W. Newman, supervisor of the research division of **Turco Products, Inc.**, has been appointed chief process engineer. In his new position he will reorganize Turco's process division to give greater technical service in the field.

Carl E. Tack has been named chief mechanical engineer, transportation equipment division, **American Steel Foundries**, succeeding **Robert B. Cottrell**, retired.

Kenneth L. Vore has been appointed an assistant vice-president—traffic, of the **United States Steel Corporation**, effective February 1. He had been general traffic manager of **Westinghouse Electric Corporation** since 1953.

Morton Manufacturing Company has appointed **Robert S. Morton** executive vice-president. He will continue to direct activities of the railway division and also will assume general administrative duties.

Picture courtesy of N.Y.N.H. & H.R.R.Co.

BIRD SELF-SEALING TIE PAD AFTER 5 YEARS SERVICE is removed for inspection. Pad had to be pried from tie owing to tenacious seal that is characteristic of all Bird Tie Pads. Reapplied, and becoming resealed after inspection, the Bird Tie Pad is good for many additional years of protective service.

Slash your tie costs 50% with BIRD Self-Sealing TIE PADS

FACTS YOU SHOULD KNOW ABOUT BIRD TIE PADS

It is common knowledge that moisture and abrasive materials destroy the supporting power of the wood under the tie plates and the holding power of the spike wood.

The Bird Self-Sealing Tie Pad was specifically developed to combat these destructive agents. *For that reason, it is entirely different in design, construction and function from any other tie pad on the market.*

This difference lies in the ability of the Bird tie pad to maintain dimensional stability. It cannot stretch or compress under passing wheel loads . . . so that it provides a constant, unbroken seal.

The Bird Self-Sealing Tie Pad completely and permanently seals out moisture and abrasives . . . the *causes* of decay under the plates . . . and, in addition to this, it prevents mechanical wear by acting as a buffer between the tie plate and the tie.

As specialists in the scientific preservation of wood for much of our 161 years in business, we are qualified to help you extend the service of your ties in track.

WHERE

- On the joint and shoulder ties of insulated joints.
- On new or older bridge decks.
- On switch timbers.
- Under crossing frogs.
- Through highway grade crossings and station platforms.
- On curves to insure holding track to gauge and surface.
- With smaller tie plates.
- Out-of-face with new or relayer rail.
- On pile cut-offs.

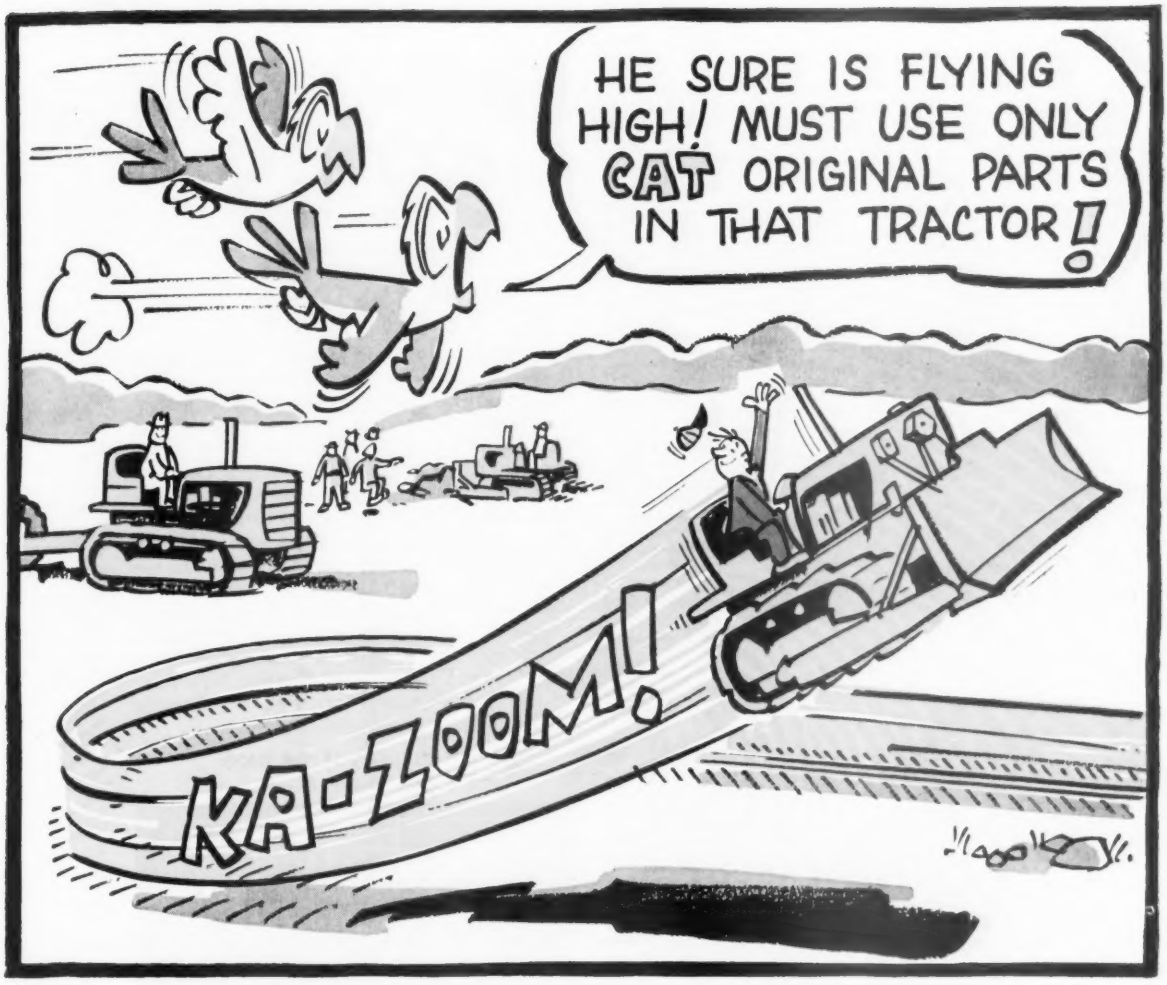
RESULTS

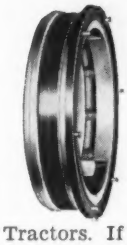
- You get 50% extra life from new ties.
- You get twice the normal remaining life expectancy from old ties that can be adzed to a smooth surface of sound wood.
- You save on gauge, line and surface maintenance costs in addition to savings on tie life.

WHEN

You start saving as soon as you start using Bird Self-Sealing Tie Pads. Bird's is the original self-sealing tie pad . . . proven by years of in-track service. Write for further information, today . . . Bird Tie Pads, Dept. HRA-3, East Walpole, Massachusetts.

BUY THE BEST BIRD & SON, inc. Established 1795 **BUY BIRD**





Are you aware of the BIG THREE in CAT* bellows seals for idlers, track rollers and final drive? You get special, long-lasting FACING MATERIAL . . . with just the right amount of CONTACT PRESSURE at the mating surfaces . . . and AUTOMATIC ALIGNMENT to keep facings flush and to compensate for wear. Each BIG THREE feature was *developed* and *proved best* for Cat-built Tractors. If it's a "look-alike" seal, who knows? Your Caterpillar Dealer will carry your inventory of Cat original parts. Ask his Parts Representative about it.

Caterpillar Tractor Co., Peoria, Illinois, U.S.A.

CATERPILLAR*

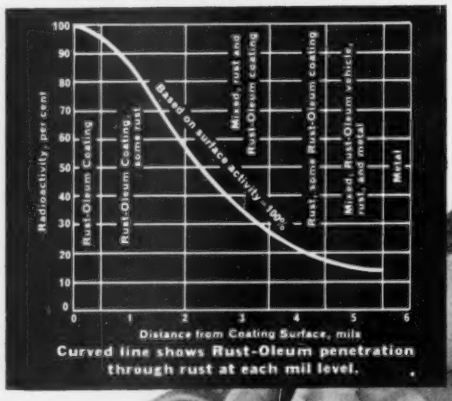
*Caterpillar and Cat are Registered Trademarks of Caterpillar Tractor Co.

There is only one Rust-Oleum . . . it is as distinctive as your own fingerprint.

RUST-OLEUM® STOPS RUST!

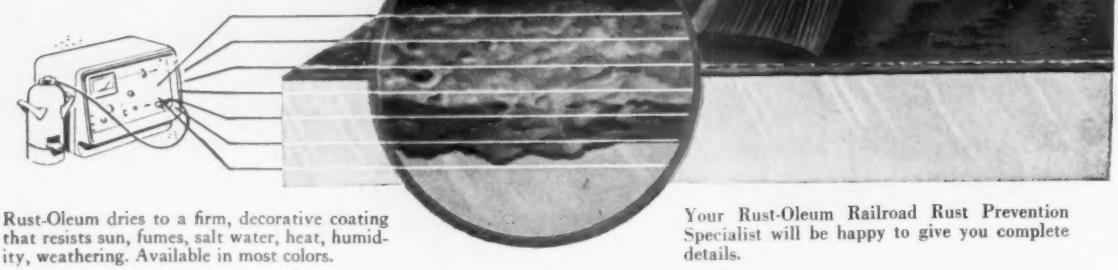
Penetration through rust to bare metal traced by Geiger Counter—Utilizing a modern tool of science, Rust-Oleum's *specially-processed* fish oil vehicle was radioactivated and formulated into Rust-Oleum 769 Damp-Proof Red Primer—then applied to rusted test panels. Geiger Counters then traced Rust-Oleum's *specially-processed* fish oil vehicle through rust down to bare metal. Because of this penetration, you can apply Rust-Oleum directly over sound rusted surfaces—usually eliminating costly surface preparations. Write for your copy of the thirty-page report entitled, "The Development of a Method To Determine The Degree of Penetration of a Rust-Oleum Fish-Oil-Based Coating Into Rust On Steel Specimens," prepared by Battelle Memorial Institute technologists.

RUST-OLEUM CORPORATION
2534 Oakton Street, Evanston, Ill.



Curved line shows Rust-Oleum penetration through rust at each mil level.

Accept no substitutes. Buy—and specify only Rust-Oleum. You'll be happy that you did.



Rust-Oleum dries to a firm, decorative coating that resists sun, fumes, salt water, heat, humidity, weathering. Available in most colors.

Your Rust-Oleum Railroad Rust Prevention Specialist will be happy to give you complete details.

Rust-Oleum is available in practically all colors, including aluminum and white

What protection does a shipper need?

Dependability!

B&O Sentinel Service protects your carload shipping plans *fully*. You get fast, *dependable* siding-to-siding schedules. You know where and when each car moves. *We* tell *you and* your customer of any schedule interruption and reforwarding. The growing volume of Sentinel Service movements is proof that dependability, the B&O way, answers shippers' needs.

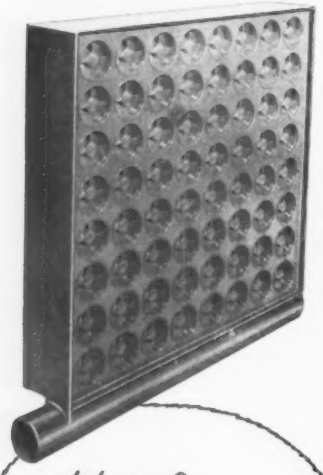
Ask our man!

LINKING 13 GREAT STATES WITH THE NATION
B&O ®

BALTIMORE & OHIO RAILROAD

Constantly *doing things* — better!

Over 10,000 FARR ROTONAMIC AIR CLEANERS Now in use on Major Railroads



Write for complete information

... and more are being installed every day! This tremendous acceptance is due to the high efficiency of Farr ROTONAMIC Air Cleaners under *all* operating conditions plus the important fact that *they have operated over 700,000 miles virtually without maintenance!* And you can tell visually and instantly the condition of the ROTONAMIC. Yes, you can substantially reduce your diesel wear and maintenance costs by installing ROTONAMICS. Manufacturers offer them as standard or optional equipment.

FARR COMPANY
LOS ANGELES • NEW YORK • CHICAGO

Manufacturing Licensees:
Farr Company Mfg. Ltd.
Montreal, Canada
The Clyde Engineering Co. Pty. Ltd.
Sydney, Australia
Intermit Ltd.
Birmingham, England

Your old-fashioned scalping cuts more profits than weeds!

Clearing weeds by shovel-cutting, with today's high cost of labor, is downright extravagant! Borate weed killers can do a much better job of weed control for a small fraction of what hand-scalping is now costing you.

Countless dollars have been saved on weed control by 'roads using our borate weed killers since we first pioneered their development. They are effective against weeds and grasses for long periods... easy to apply... and safe to use wherever vegetation is unwanted. Today we offer a choice of several proven herbicidal formulations—each with special characteristics and advantages—to meet *your* particular requirements.

Start *your* labor-saving weed control program now. Talk to one of our technically-trained salesmen. He will be glad to recommend and demonstrate the right weed killer for you. Write today for literature or to arrange a meeting.

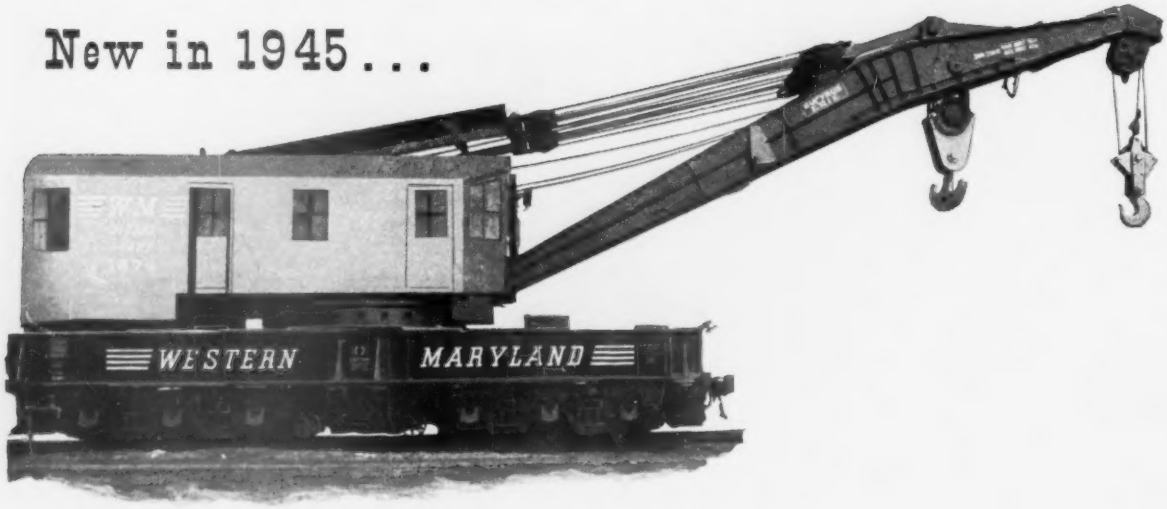
United States Borax & Chemical Corporation

PACIFIC COAST BORAX COMPANY DIVISION

630 SHATTO PLACE • LOS ANGELES 5, CALIFORNIA

Concentrated BORASCU® • UREABOR® • POLYBOR-CHLORATE® • MONOBOR-CHLORATE®

New in 1945...



NEW AGAIN in 1957 . . . with

Diesel Conversion by L. B. Smith, Inc.

This giant 250 ton Western Maryland self-propelled Bucyrus-Erie wrecking crane was recently converted in our shops from steam to Diesel power. Remodelling included the installation of a General Motors Diesel with Allison torque converter, Westinghouse air controls with compressor and Twin Disc air reversing clutches. The cab was moved from back to front for maximum visibility by the operator. Identical controls with which the operator was familiar were arranged in their same previous location.

This big Dieselization job is one of some 50 cranes modernized by our personnel, specialists in this type of Diesel conversion.

If you are considering a modernization program, it will pay you to investigate our know-how and facilities.

For complete information, phone or write:

L. B. SMITH, INC.

CAMP HILL, PENNSYLVANIA

Telephone (Harrisburg) RE 7-3431

HITCH YOUR TRAILER TO A STAR!

acf

sets the pace in railroad equipment

It's a star performer on all counts: more secure tie-down, more lading protection, and six times *faster* tie-down!

One man raises and locks the acf Retractable Trailer-Hitch in less than three minutes, using nothing more than a portable power wrench. Locked to the "fifth wheel", the acf Trailer-Hitch holds the trailer more securely than any other method, protects it and its cargo with 40,000 foot-pounds of cushioning capacity. Hitch retracts to 8-inch height for loading and unloading.

Savings in man-hours and terminal time, security that permits unrestricted interchange of trailers-on-flat-cars, and safe, simple operation give the acf Retractable Trailer-Hitch top billing in railroad-trailer service all over the country.

Available now for installation on present equipment, acf standard flat cars and acf ADAPTO cars. For full information, design details, specifications, price and delivery, contact your nearest acf sales office.

acf **AMERICAN CAR AND FOUNDRY**

Division of acf Industries, Incorporated, 30 Church Street, New York, N.Y.

Sales Offices: New York • Chicago • St. Louis • Cleveland • Washington, D.C. • Philadelphia • San Francisco.
Plants: Berwick, Pa. • Huntington, W. Va. • Milton, Pa. • St. Charles, Mo. • St. Louis, Mo.

RAILWAY AGE
The Industry's Newsweekly

WHAT'S NEWS in Products

Continuous Welding

. . . with magnetic flux

Unionarc welding is a manual arc process employing a continuously fed wire electrode magnetically coated with flux and shielded in a gas atmosphere. This process is now being used to produce high-quality welds in steel. The manufacturer states that it can be used in all positions at greater speeds and lower costs than covered electrodes.

A bare wire electrode of common steel composition is continuously fed from a 300-lb capacity pack through a flexible tube to the torch. The operator starts and continues welding to suit his requirements. Frequent stopping to change electrodes is unnecessary. The wire pack is supported and rotated on a motor-driven turntable, controlled so that wire tension at the feed rolls is minimized. The large wire pack provides at least one week's supply with average welding conditions.

Magnetizable flux is placed in a dispenser and fed through a flexible tube to the torch. The dispenser is designed to measure out exactly the quantity of flux required for the amount of wire that is being fed. The dispenser can be adjusted to feed different flux-to-wire ratios, but the usual ratio is between ⅜ and ½ lb of flux to 1 lb of wire. This predetermined ratio is automatically maintained regardless of the rate of wire feed.

The flux is fluidized at the dispenser in a stream of welding-grade carbon dioxide gas. The gas, supplied commercial containers, is regulated as to pressure and flow and carries the flux to the torch suspended in the gas stream.

At the torch nozzle, a magnetic field, created by the electric current passing through the wire, magnetizes and attracts the flux to the wire. As a result, the wire is coated as it is fed into the arc. The flux melts and serves, together with the shielding gas, to stabilize the arc and the stream of molten metal passing through it to the puddle, and to protect the puddle from atmospheric contamination; to refine the molten metal by deoxidation; to provide the desired control of weld contour by its effect on surface tension; and to provide the desired cooling rate of the weld metal by its blanketing and insulating action.

The welding current is supplied by a direct current power source. The arc characteristics of Unionarc welding are similar to those of covered electrode welding. The small amount of spatter produced is not tenacious, and can be removed by wiping or light brushing. Manual skill and dexterity requirements do not exceed those for covered electrode welding.

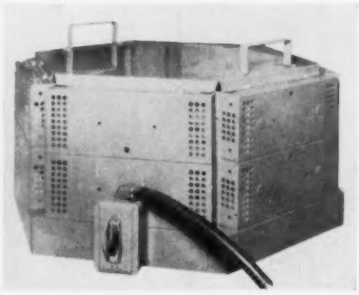
The sequence of starting and stopping the flow of current, wire, flux, and gas, as well as the maintenance of proper welding conditions, is regulated through an electronic control unit.

The torch is rated at 450 amp continuous duty. *Linde Air Products Company, Division of Union Carbide & Carbon Corp., Dept. RA, New York* •

Aluminum Track Jack

. . . has 15-ton capacity

To meet the universal demand for lighter weight in track tools, an aluminum ratchet trip-type track jack has recently been introduced. The Model No. 514-A has a high-strength aluminum alloy frame, which is topped by a fixed-position bail handle to facilitate ease in carrying. Weighing 32 lb, it maintains the standard required 15-ton capacity. According to the manufacturer, the ratchet mechanism is positive, safe and easy to operate. Supported by a base area of over 66 inches, the Model 514-A has a closed height of 11 in. and a lift of 5 in. *Western Railroad Supply Company, Dept. RA, 2428 S. Ashland ave., Chicago 8* •



Infrared Heater

. . . aids shrink fitting

A general purpose infrared oven has just been made available as a portable and low cost source of radiant energy. It is well adapted for most shrink fitting operations, including bearing races, pinions, couplings and other machine parts. A specific application of the new unit is the heating of diesel locomotive traction motor pinions to proper temperatures for shrink fitting on motor shafts.

The oven is rated 6,000 watts and can be operated on 110-, 220- or 440-volt circuits. Fast acting with no warm-up period. It weighs 48 lb complete, and can conveniently be carried by one man. The interior is Alzak-coated specular aluminum for high reflectivity and resistance to oxidation.

A separate asbestos insulated base has four Marinite standoffs to insure radiation to the under surfaces of the product being heated. The radiant energy source is 12 General Electric 500-watt T-3 tubular quartz infrared lamps having a life in excess of 5,000 hours at rated voltage. *Lighting Division, Safety Industries, Inc., Dept. RA, Milford, Conn.* •

Impact Recorder

. . . runs 24 hours

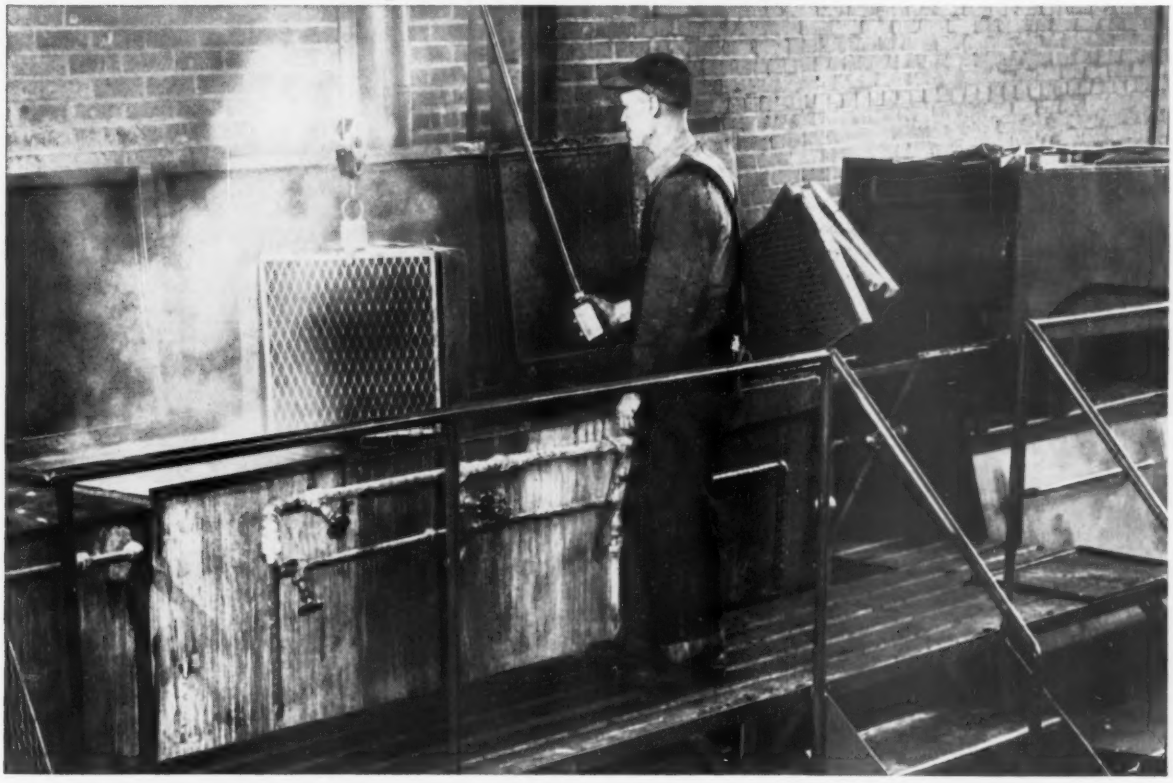
The Impact-O-Graph for use on a locomotive is capable of running 24 hours unattended. It can be concealed or placed in full view. Severity of starting and stopping, slack bunching, stretching and idle time are all clearly indicated on the 30 in. per hr tape. In addition to recording freight-train operation, it may be used to evaluate riding qualities of passenger equipment. *Impact-O-Graph Corp., Dept. RA, 1900 Euclid ave., Cleveland* •

ENGINEER'S FIELD REPORT

PRODUCT CHEVRON* FILTER COAT

FIRM MILWAUKEE R.R.
Seattle, Washington

Special adhesive coating increases efficiency of filters up to 50%

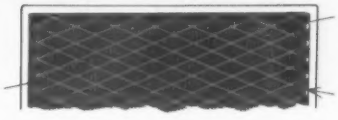


THE MILWAUKEE ROAD has found Chevron* Filter Coat increases the efficiency of its air filters as much as 50% compared to the oils they previously used—according to the District Diesel Supervisor. They have used this product on impingement-type car-body and engine-air filters since 1953, when it was first introduced.

To service the great number of filters in use, the railroad installed a special production line. Process starts with a thorough steam and chemical cleaning of filters. They are then dipped (above) in heated Chevron Filter Coat. After draining 15 minutes, filters are placed in drying ovens.

Chevron Filter Coat gives complete protection not only against heavy dirt and dust, but also grit from sanding. Even under adverse operating conditions, Chevron Filter Coat does not drip off screens, but maintains its high wicking ability, and keeps dust and grit out of engines.

Why Chevron* Filter Coat ups efficiency of air filters



- Will not drip off screens—gives full filtering efficiency through entire service period.
- Easily applied and cleaned.
- High wicking ability—quickly soaks dust particles.

*The Chevron Brand covers the line of industrial products formerly sold under the Calol name. This is a name change only. The high quality and specifications remain the same.

CHEVRON Industrial Lubricants

TRADEMARK "CHEVRON" AND DESIGN REG. U.S. PAT. OFF.

For More Information about this or other petroleum products, or the name of your nearest distributor, write or call any of the companies listed below.

STANDARD OIL COMPANY OF CALIFORNIA, San Francisco 20
THE CALIFORNIA OIL COMPANY, Perth Amboy, New Jersey
STANDARD OIL COMPANY OF TEXAS, El Paso
THE CALIFORNIA COMPANY, Denver 1, Colorado

"FLUSH"
WITHOUT COUNTERSINKING

Lewis sealtite car bolts

"Wood engineered" for a smooth level-with-the-surface moisture tight seal without countersinking . . . Sealtite fins bear against wood on a radial plane to prevent turning when nuts are set. Available in Hot-Dip Galvanized finish for "Long Life Economy," in black for low first cost. Call, write or wire for sample prices.

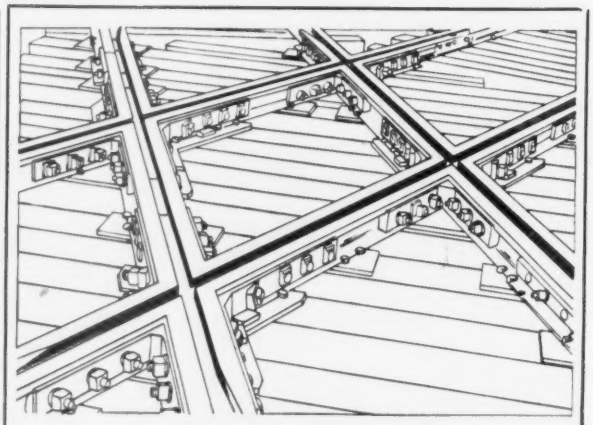
Bolt available with Loktite Nut No. 2 or std. sq. (shown) and hexagon nuts.

Cross section of head from above, showing fins, bevel and shank.

All products are manufactured in the U.S.A. to A.S.T.M. specifications.

Lewis BOLT & NUT COMPANY
504 Malcolm Ave. S. E.
MINNEAPOLIS 14, MINNESOTA

U QUALITY



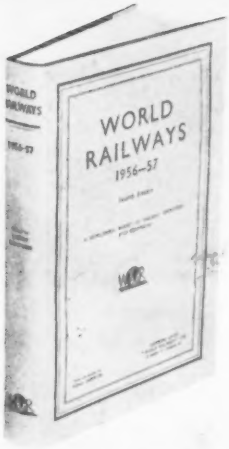
CROSSINGS
FROGS—SWITCHES

Your Railroad Track Material requirements tailor-made exactly to specifications.

NELSON IRON WORKS, backed by years of know-how in this highly specialized business, is a recognized leader in the field.

NELSON
IRON WORKS, INC.

45 SPOKANE STREET • SEATTLE, WASHINGTON



New 4th edition now available —

WORLD RAILWAYS
1956-57

A world-wide survey of railway operation and equipment covering 1,470 railways in 106 countries.

World Railways is to the railways what Jane's *Fighting Ships* and *All the World's Aircraft* are to navies and to aviation. In its 500 pages of text and 897 illustrations is most of the information that railroaders, railway suppliers, and anyone interested in railroading throughout the world could possibly need.

CONTENTS: ***Locomotive and rolling stock builders*** **and their latest products (88 pages).** ***The world's railways*** **(354 pages) divided into six geographic areas with index and tabular material under 32 headings. Major systems are exhaustively described and mapped and considerable information is included on recent activities and future plans.** ***Diesel locomotives*** **for rail transport (42 pages). Descriptions of diesel engines from 100 to 2,400 h.p. arranged by country.** ***Descriptive articles of topical interest*** **— radio, flexible rail fastenings, lightweight trains, maintenance-of-way machinery, etc.**

price $20.00 postpaid

Add $2.00 for foreign postage and remit in U.S. funds by draft or international money order.

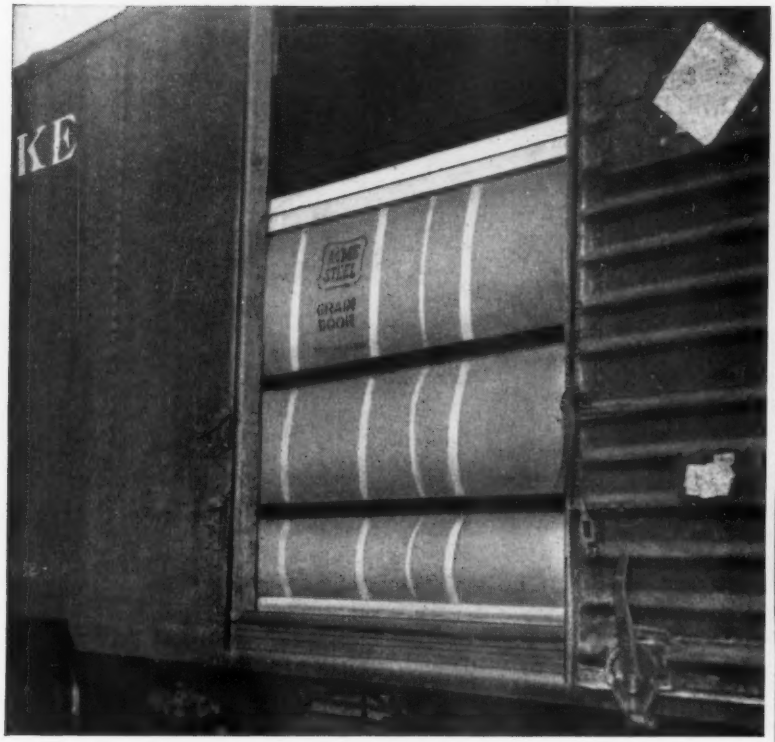
RAILWAY AGE BOOKS
Dept. RA 3-18-57
30 Church St. New York 7, N.Y.

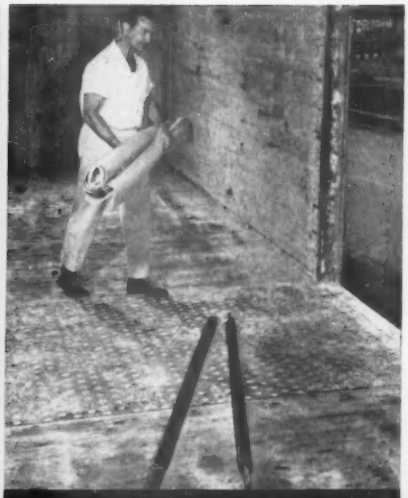
Enclosed is remittance for $..... Send postpaid ..... copies of World Railways

Name .....

Address .....

City, zone, state .....





ONE MAN . . . FIVE MINUTES . . . Acme Steel furnishes all the parts, just unroll the package, drive ten nails per door and the Acme Steel Grain Door is in place.

STRONG . . . TIGHT . . . severe tests prove that the Acme Steel Grain Door can take all the punishment encountered under all handling and transit conditions.

NO BULGE . . . EASY TO LOAD and UNLOAD . . . horizontal steel beams and vertical steel slats prevent bulge from springing the car door. Automatic and manual unloading are fast and easy.

this ACME STEEL grain door **IDEA** can help you serve grain shippers better, faster

Proved in service, these Acme Steel Grain Doors provide a fast, economical barrier for grain or malt shipped in box cars.

They're easy to set up for loading. Unloading is fast and simple. In transit, or during loading and unloading, Acme Steel Grain Doors assure positive protection and control of the load. Heavy, reinforced, high quality paper, supported by horizontal steel beams and vertical, flexible steel slats holds grain load securely and clear of the car door.

Let an Acme Idea Man give you a demonstration, or show you the new fact-packed Acme Steel Grain Door movie, or write for folder today. There is no obligation. Dept. RAG-37, Acme Steel Products Division, Acme Steel Company, Chicago 27, Ill.

ACME STEEL GRAIN DOORS

MODEL P-45-A PORTABLE RAIL SURFACE GRINDER: Powered by 4-cycle, air-cooled gasoline engine developing 7½ hp at 2600 rpm. Adjustable V-belt drive acts as overload release.

MODEL X-60 PORTABLE CROSS GRINDER. Powered by 4-cycle, air-cooled gasoline engine developing 3.4 hp. Hand-actuated lock control lever allows easy alignment with rail joint.

Do Your One-Man Jobs Faster with Low Cost RTW Grinders

These light weight, portable grinders are ideally fitted to your one-man rail end joint grinding jobs. They do the job faster, with less operator fatigue. Vibration is reduced to a minimum because the engines are mounted on rubber bushings. Designed for long life at low initial and operating cost, they give greater accuracy in performance with a minimum of skill and effort. Their portability makes them especially useful for maintenance work in heavy traffic areas.

Model P-45-A, a cup wheel grinder, is mainly used for grinding welded rail ends and for removing mill tolerance and mill scale before heat treating rail ends. It leaves a very smooth and highly polished surface.

Model X-60, cross grinder or slotting machine, quickly removes overflowed metal at rail joints. It is also used with out-of-face rail end welding crews and for cross grinding rail ends behind the crews.

RTW Grinders are designed and engineered by specialists in track maintenance equipment.

Write today for complete details.

Railway Track-work Co.

3207 KENSINGTON AVE., PHILADELPHIA 34, PA.

TRACK MAINTENANCE MACHINERY

Rail Grinders	Ballast Extruders
Switch Grinders	Bit Sharpeners
Cross Grinders	Tie Nippers
Surface Grinders	Grinding Wheels
Rail Drills	Cut-off Wheels
Cross Cutters	Tie Handlers

Track Liners

long range economy starts today with

...Crossbuck Signs of REYNOLDS ALUMINUM

Extruded aluminum crossbucks will not rust or rot; they resist atmospheric corrosion from coal smoke, diesel exhaust, and withstand severe weather and winds up to 100 mph. These are some of the reasons why aluminum crossbucks last longer than those of rustable metals or wood—cost far less to maintain.

Aluminum crossbucks are light in weight. This means lower shipping costs, easier handling, and faster installation. Aluminum also provides an excellent base for painted or reflectorized finishes.

Reynolds offers a variety of strong extruded aluminum crossbucks to meet wide-ranging design or engineering requirements. And for real savings on operating signs, box car doors, car roofs, loader beams, floor racks, signal cable—consider Reynolds Aluminum. Reynolds Aluminum Specialists will assist you and your suppliers of railroad equipment in planning long range economy, *today*. For details, call your nearby Reynolds Office or write *Reynolds Metals Company, P.O. Box 1800-TM, Louisville 1, Kentucky.*

See "CIRCUS BOY", Reynolds exciting dramatic series, Sundays NBC-TV

Freight Operating Statistics of Large Railways—Selected Items

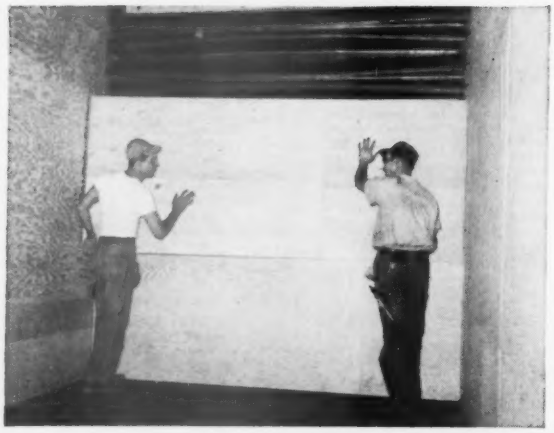
Region, Road and Year		Miles of road operated	Locomotive Miles: Train miles	Locomotive Miles: Principal and helper	Locomotive Miles: Light	Car Miles: Loaded (*thousands*)	Car Miles: Per cent loaded	Ton-miles (*thousands*): Gross excl.locos & tenders	Ton-miles (*thousands*): Net rev. and non-rev.	Road-locos. on lines: Serviceable: Unstored	Road-locos. on lines: Serviceable: Stored	Road-locos. on lines: B.O.	Road-locos. on lines: Per cent B.O.
New Eng. Region	Boston & Maine 1956	1,560	239,663	246,325	11,024	9,347	66.2	621,773	257,407	68	..	3	4.2
	1955	1,562	254,503	260,430	11,789	9,624	66.5	628,180	255,617	65	..	1	1.5
	N. Y., N. H. & Hfd 1956	1,739	257,721	257,721	20,407	10,871	66.5	693,265	279,839	91	..	5	5.2
	1955	1,746	285,555	285,601	18,590	11,532	67.3	711,579	287,280	99	..	8	7.5
Great Lakes Region	Delaware & Hudson 1956	771	186,016	192,670	8,295	10,052	68.3	711,398	369,384	40	..	1	2.4
	1955	792	187,432	193,114	7,365	10,118	70.7	683,161	359,339	40	..	1	2.4
	Del., Lack. & Western 1956	962	281,016	295,436	30,148	12,759	68.0	848,326	372,673	64	..	..	..
	1955	962	312,683	328,754	27,558	12,887	67.8	852,584	373,724	62	..	2	3.1
	Erie 1956	2,207	599,709	607,937	22,421	32,623	66.9	2,081,195	839,715	169	..	2	1.2
	1955	2,226	611,983	618,335	26,429	32,879	68.3	2,035,539	818,745	165	..	..	..
	Grand Trunk Western 1956	951	274,783	280,018	1,983	8,365	57.2	620,968	241,985	57	1	17	22.7
	1955	951	304,212	310,058	2,560	9,408	59.8	685,294	281,098	59	..	18	23.4
	Lehigh Valley 1956	1,134	226,733	230,403	8,000	10,690	66.5	740,312	347,742	33	..	1	2.9
	1955	1,137	218,106	222,072	8,974	10,742	66.2	737,366	341,422	32	..	2	5.9
	New York Central 1956	10,565	2,310,896	2,336,374	104,241	95,538	57.9	7,133,311	3,108,958	493	3	58	10.5
	1955	10,661	2,689,962	2,741,068	120,097	106,114	60.0	7,810,515	3,432,886	572	4	73	11.2
	New York, Chic. & St. L. 1956	2,155	746,731	766,440	7,779	31,266	63.2	2,250,140	992,318	169	..	25	12.9
	1955	2,154	780,661	804,532	7,057	31,479	63.4	2,226,184	985,342	175	..	21	10.7
	Pitts. & Lake Erie 1956	221	68,412	68,412	....	2,848	61.8	249,116	148,119	14	..	..	..
	1955	221	66,316	66,588	34	2,837	65.8	237,436	142,691	14	..	1	6.7
	Wabash 1956	2,379	533,280	534,764	6,432	22,900	63.4	1,541,271	597,738	113	..	..	..
	1955	2,381	549,279	551,678	6,583	24,013	64.9	1,560,687	592,293	104	..	1	1.0
Central Eastern Region	Baltimore & Ohio 1956	5,897	1,654,082	1,841,783	172,998	66,329	60.5	5,337,001	2,555,938	471	13	89	15.5
	1955	5,920	1,748,005	1,940,842	190,719	64,239	60.3	5,321,377	2,532,972	455	1	86	15.9
	Bessemer & Lake Erie 1956	208	42,417	43,853	289	1,834	64.5	204,080	131,999	14	..	..	..
	1955	208	39,892	39,833	48	1,452	65.5	155,523	99,151	13	3	..	..
	Central RR Co. of New Jersey 1956	612	128,283	129,859	7,492	5,311	65.3	401,304	214,296	66	..	4	5.7
	1955	613	127,632	128,675	6,330	5,203	68.1	379,907	204,077	64	..	1	1.5
	Chicago & Eastern Ill. 1956	862	129,547	129,547	2,772	5,702	62.3	442,768	229,884	28	..	3	9.7
	1955	868	140,534	140,534	2,823	5,729	63.8	426,159	207,797	28	..	2	6.7
	Elgin, Joliet & Eastern 1956	236	95,811	96,379	....	2,916	59.4	245,649	129,514	38	..	2	5.0
	1955	236	91,801	92,505	....	2,798	62.0	230,446	123,452	36	..	4	10.0
	Pennsylvania System 1956	9,905	3,039,983	3,232,220	237,870	122,073	62.3	9,118,487	4,229,102	825	5	215	20.6
	1955	9,892	3,016,004	3,201,538	238,034	122,335	63.0	8,817,868	4,040,675	826	15	414	33.0
	Reading 1956	1,303	367,906	370,780	14,652	14,834	61.6	1,258,993	684,038	174	..	18	9.4
	1955	1,306	376,596	378,749	11,637	14,710	63.4	1,215,537	662,578	165	..	29	14.9
	Western Maryland 1956	846	176,373	185,163	12,412	7,479	61.9	652,490	371,197	49	..	..	..
	1955	846	179,992	188,079	11,805	7,263	62.3	620,391	350,492	35	..	..	..
Pocahontas Region	Chesapeake & Ohio 1956	5,067	1,563,656	1,569,722	29,936	65,796	54.1	6,028,974	3,296,163	595	17	61	9.1
	1955	5,067	1,616,499	1,645,727	54,853	64,071	55.2	5,680,000	3,109,862	454	4	128	21.8
	Norfolk & Western 1956	2,110	761,366	830,906	75,063	37,159	56.0	3,571,892	1,949,515	217	3	14	6.0
	1955	2,103	783,118	842,905	73,532	37,099	59.1	3,424,153	1,890,944	232	5	18	7.1
Southern Region	Atlantic Coast Line 1956	5,283	824,603	824,603	10,709	24,976	54.5	1,958,427	833,222	141	..	5	3.4
	1955	5,278	894,219	894,231	10,892	27,445	55.9	2,085,383	924,426	235	..	1	.4
	Central of Georgia 1956	1,731	194,142	194,142	2,034	7,282	65.2	519,876	245,839	76	..	5	6.2
	1955	1,731	200,242	200,265	1,835	8,111	68.2	561,530	271,891	75	..	2	2.6
	Gulf, Mobile & Ohio 1956	2,717	276,248	276,248	461	15,469	66.9	1,086,601	518,388	87	..	4	4.4
	1955	2,717	278,787	278,787	153	15,409	66.8	1,059,230	499,814	88	..	3	3.3
	Illinois Central 1956	6,503	1,202,403	1,203,213	34,320	47,593	59.9	3,596,523	1,653,932	312	6	77	19.5
	1955	6,531	1,348,130	1,350,129	41,517	51,794	60.5	3,891,485	1,797,157	336	5	147	30.1
	Louisville & Nashville 1956	4,713	950,690	953,121	15,853	33,555	59.6	2,562,793	1,282,022	179	..	17	8.7
	1955	4,714	996,767	1,005,538	20,722	35,507	61.5	2,708,222	1,376,815	191	..	21	9.9
	Nash., Chatt. & St. Louis 1956	1,043	172,218	175,839	3,814	5,257	68.4	351,893	164,765	50	..	3	5.7
	1955	1,043	185,959	190,082	4,268	5,793	67.5	391,395	182,309	50	..	3	5.7
	Seaboard Air Line 1956	4,051	695,357	695,357	4,073	26,193	60.1	1,991,422	889,611	147	..	8	5.2
	1955	4,053	674,726	674,726	3,148	26,220	61.6	1,932,204	880,563	147	..	7	4.5
	Southern 1956	6,251	882,383	882,453	10,683	42,331	63.6	2,896,510	1,312,103	189	13	9	4.3
	1955	6,259	948,498	948,568	12,922	45,270	66.2	2,989,414	1,360,420	278	..	2	.7
Northwestern Region	Chicago & North Western 1956	7,762	635,564	636,613	6,747	25,973	64.3	1,809,806	779,170	135	..	5	3.6
	1955	7,810	731,187	733,924	9,529	29,717	65.0	2,002,180	891,510	134	14	39	20.9
	Chicago Great Western 1956	1,437	132,782	132,782	205	7,908	68.4	534,186	245,733	31	..	1	3.1
	1955	1,437	137,839	137,839	187	8,005	69.9	528,098	242,815	30	..	3	9.1
	Chic., Milw., St. P. & Pac. 1956	10,620	930,422	944,936	19,420	40,820	62.7	2,860,211	1,268,860	277	1	18	6.1
	1955	10,633	997,279	1,013,227	22,531	41,541	64.4	2,847,208	1,259,547	271	7	12	4.1
	Chic., St. P., Minn. & Omaha 1956	1,606	151,198	151,198	2,809	5,257	66.8	363,036	164,544	35	..	2	5.4
	1955	1,606	166,307	167,659	5,259	5,490	63.9	391,816	171,970	59	..	18	23.4
	Duluth, Missabe & Iron Range 1956	566	71,061	71,370	1,087	2,432	51.9	241,539	128,496	44	16	13	17.8
	1955	570	34,847	35,171	554	662	53.6	51,977	24,988	28	23	21	29.2
	Great Northern 1956	8,273	1,115,682	1,119,973	37,474	41,296	68.1	2,956,923	1,424,348	246	63	34	9.9
	1955	8,273	1,171,482	1,179,270	44,485	41,323	68.6	2,898,330	1,377,080	276	55	41	11.0
	Minneap., St. P. & S. Ste. M. 1956	4,171	411,259	412,902	1,643	13,894	62.6	979,258	433,876	82	4	5	5.5
	1955	4,171	398,211	400,603	2,667	9,835	64.6	906,829	299,255	79	11	3	3.2
	Northern Pacific 1956	6,536	799,781	815,861	22,890	30,735	62.0	2,213,376	968,924	223	56	29	9.4
	1955	6,569	884,370	906,397	25,950	33,258	63.9	2,309,595	1,037,286	264	38	57	15.9
Central Western Region	Atch., Top. & S. Fe (incl. G. C. & S. F. and P. & S. F.) 1956	13,150	2,528,824	2,643,571	52,723	114,088	62.9	7,961,878	2,968,531	554	48	67	10.0
	1955	13,147	2,620,335	2,732,359	70,553	118,985	63.0	8,091,475	2,927,394	529	89	23	3.6
	Chic., Burl. & Quincy 1956	8,765	1,070,551	1,065,819	27,473	47,264	64.5	3,252,045	1,417,164	161	33	29	13.0
	1955	8,772	1,138,766	1,131,762	28,383	48,622	64.7	3,294,153	1,408,906	260	23	36	11.3
	Chic., Rock I. & Pac. 1956	7,581	956,601	960,016	2,001	37,242	60.9	2,708,345	1,125,882	169	..	6	3.4
	1955	7,903	897,199	894,717	1,016	35,565	62.2	2,542,717	1,049,264	171	..	4	2.3
	Denver & R. G. Wn. 1956	2,155	311,450	337,025	33,315	15,360	72.1	1,052,377	524,019	74	8	5	5.7
	1955	2,155	303,524	326,604	38,300	14,218	68.6	996,760	478,217	63	9	29	28.7
	Southern Pacific 1956	8,038	2,082,198	2,174,032	119,479	94,581	65.5	6,422,965	2,696,778	627	113	49	6.2
	1955	8,066	2,199,486	2,284,478	170,290	93,441	65.2	6,250,211	2,534,865	606	41	105	14.0
	Union Pacific 1956	9,786	2,321,352	2,377,396	99,360	106,707	64.4	7,288,963	3,117,164	413	29	100	18.5
	1955	9,805	2,484,707	2,535,615	107,756	107,516	63.1	7,331,857	3,029,134	457	47	140	21.7
	Western Pacific 1956	1,190	226,787	244,687	11,273	10,385	71.6	667,466	301,413	47	..	..	..
	1955	1,190	214,659	224,658	13,794	9,285	68.6	613,567	271,833	45	1	..	..
Southwestern Region	Kansas City Southern 1956	886	148,268	148,298	132	8,495	66.9	626,277	291,903	26	..	1	3.7
	1955	886	162,326	162,571	454	8,796	65.4	645,735	291,690	26	..	2	7.1
	Louisiana & Arkansas 1956	746	95,610	95,610	....	4,240	63.4	331,343	154,680	15	..	..	..
	1955	753	108,866	108,866	166	4,267	62.3	335,650	153,931	17	..	..	..
	Mo.-Kans.-Texas Lines 1956	3,171	375,760	375,760	4,468	15,173	63.7	1,003,008	346,860	81	..	..	..
	1955	3,230	336,645	336,645	3,383	14,486	64.7	955,130	408,999	85	..	..	..
	Missouri Pacific 1956	9,653	1,215,203	1,215,203	10,444	53,959	63.4	3,854,798	1,718,656	318	..	46	12.6
	1955	9,709	1,314,816	1,314,816	10,954	55,379	63.4	3,911,808	1,717,888	317	25	40	10.5
	Texas & Pacific 1956	1,822	300,833	300,833	4,051	15,066	61.1	1,134,635	430,798	47	..	..	..
	1955	1,822	350,038	350,038	4,077	16,244	60.7	1,202,279	451,654	62	..	1	1.6
	St. Louis-San Francisco 1956	4,573	643,797	643,797	6,055	25,620	66.0	1,739,327	789,185	99	..	15	13.2
	1955	4,573	619,242	619,242	5,847	24,921	65.6	1,663,826	734,363	112	..	7	5.9
	St. Louis Southw. Lines 1956	1,554	334,620	334,670	1,578	15,385	66.5	999,206	446,659	54	..	1	1.8
	1955	1,554	341,032	341,122	1,695	16,067	71.2	1,004,728	449,128	55	..	2	3.5
	Texas & New Orleans 1956	4,285	645,134	645,134	618	27,646	64.6	1,935,050	854,313	154	..	2	1.3
	1955	4,302	715,889	715,889	1,948	28,688	65.6	1,980,134	872,283	142	..	2	1.4

For the month of December 1956 Compared with December 1955

	Region, Road and Year		Freight cars on line				G.t.m.per train-hr. excl.locos and tenders	G.t.m.per train-mi. excl.locos and tenders	Net ton-mi. per train-mile	Net ton-mi. per l'd car-mile	Net ton-mi. per car-day	Car-miles per car-day	Net daily ton-mi. per road-mi.	Train-miles per train-hour	Miles per loco. per day
			Home	Foreign	Total	Per Cent B.O.									
New Eng. Region	Boston & Maine	1956	1,338	8,992	10,330	1.9	38,880	2,599	1,076	27.5	783	43.0	5,323	15.0	128.8
		1955	1,694	9,265	10,959	4.3	37,968	2,475	1,007	26.6	759	43.0	5,279	15.4	152.2
	N. Y., N. H. & Htfd	1956	2,486	13,782	16,268	2.3	43,465	2,690	1,086	25.7	549	32.1	5,191	16.2	112.2
		1955	2,038	17,899	19,937	2.6	39,366	2,492	1,006	24.9	455	27.1	5,308	15.8	114.6
Great Lakes Region	Delaware & Hudson	1956	2,215	7,391	9,606	4.1	66,195	3,840	1,994	36.7	1,286	51.2	15,455	17.3	172.7
		1955	2,224	5,516	7,740	4.8	64,534	3,660	1,925	35.5	1,483	59.1	14,636	17.7	172.0
	Del., Lack. & Western	1956	4,308	12,395	16,703	2.5	53,999	3,073	1,350	29.2	755	38.0	12,497	17.9	177.0
		1955	4,298	12,955	17,253	2.2	47,086	2,767	1,213	29.0	717	36.5	12,532	17.3	196.8
	Erie	1956	6,078	22,394	28,472	2.1	69,797	3,504	1,414	25.7	970	56.3	12,273	20.1	130.5
		1955	7,423	20,126	27,549	3.3	63,490	3,359	1,351	24.9	979	57.5	11,865	19.1	139.1
	Grand Trunk Western	1956	4,317	8,989	13,306	7.0	50,026	2,283	890	28.9	582	35.2	8,208	22.1	130.6
		1955	4,102	10,490	14,592	6.9	49,048	2,276	933	29.9	636	35.6	9,535	21.8	145.6
	Lehigh Valley	1956	4,208	10,026	14,234	5.6	71,645	3,300	1,550	32.5	787	36.4	9,892	21.9	245.3
		1955	7,715	8,713	16,428	4.8	70,962	3,418	1,582	31.8	667	31.7	9,687	21.0	238.1
	New York Central	1956	49,445	98,353	147,798	2.5	51,405	3,157	1,376	32.5	680	36.1	9,493	16.7	153.4
		1955	49,696	104,341	154,037	3.3	48,774	2,947	1,295	32.4	725	37.4	10,387	16.8	157.6
	New York, Chic. & St. L.	1956	7,986	14,787	22,773	6.5	54,973	3,070	1,354	31.7	1,297	64.6	14,854	18.2	141.4
		1955	7,156	18,089	25,245	6.1	48,584	2,926	1,295	31.3	1,254	63.2	14,756	17.0	147.5
	Pitts. & Lake Erie	1956	2,553	9,448	12,001	4.1	50,934	3,680	2,188	52.0	407	12.7	21,620	14.0	172.4
		1955	2,318	8,225	10,543	2.9	54,596	3,632	2,182	50.3	406	12.3	20,828	15.2	156.0
	Wabash	1956	8,506	11,535	20,041	4.2	62,488	2,904	1,126	26.1	960	58.0	8,105	21.6	163.1
		1955	9,065	10,363	19,428	4.2	61,401	2,853	1,083	24.7	984	61.5	8,025	21.6	181.6
Central Eastern Region	Baltimore & Ohio	1956	43,490	55,290	98,780	3.4	51,354	3,283	1,572	38.5	843	36.2	13,982	15.9	118.8
		1955	42,267	49,181	91,448	6.4	47,048	3,097	1,474	39.4	898	37.8	13,802	15.5	133.3
	Bessemer & Lake Erie	1956	5,047	721	5,768	8.7	78,917	5,034	3,256	72.0	768	16.5	20,471	16.4	112.0
		1955	3,133	967	4,100	17.4	60,989	4,082	2,602	68.3	815	18.2	15,377	15.6	94.0
	Central RR Co. of New Jersey	1956	2,071	11,056	13,127	6.2	45,111	3,277	1,750	40.3	538	20.4	11,295	14.4	89.1
		1955	2,419	9,955	12,374	7.6	43,582	3,103	1,667	39.2	528	19.8	10,739	14.6	88.6
	Chicago & Eastern Ill.	1956	2,594	3,985	6,579	7.8	60,413	3,440	1,786	40.3	1,178	46.9	8,603	17.7	148.6
		1955	2,511	3,645	6,156	9.3	51,895	3,050	1,487	36.3	1,083	46.8	7,722	17.1	161.8
	Elgin, Joliet & Eastern	1956	6,653	12,079	18,732	5.6	19,775	2,705	1,426	44.4	230	8.7	17,703	7.7	101.7
		1955	6,853	9,989	16,842	5.2	20,197	2,669	1,430	44.1	237	8.7	16,874	8.0	96.1
	Pennsylvania System	1956	105,539	90,451	195,990	7.2	52,038	3,085	1,431	34.6	696	32.2	13,773	17.3	114.2
		1955	95,046	99,274	194,320	7.7	50,664	3,007	1,378	33.0	670	32.2	13,177	17.3	94.6
	Reading	1956	10,611	26,193	36,804	2.3	51,087	3,428	1,862	46.1	630	22.2	16,935	14.9	79.0
		1955	11,059	22,146	33,205	3.9	50,612	3,228	1,759	45.0	652	22.8	16,366	15.7	75.7
	Western Maryland	1956	5,259	4,480	9,739	2.3	51,414	3,799	2,161	49.6	1,173	38.2	14,154	13.9	150.6
		1955	4,127	5,831	9,958	2.5	48,888	3,529	1,994	48.3	1,156	38.4	13,364	14.2	195.7
Pocahontas Region	Chesapeake & Ohio	1956	52,697	26,649	79,346	.5	74,393	3,879	2,121	50.1	1,322	48.8	20,984	19.3	81.3
		1955	45,622	30,700	76,322	1.4	64,646	3,541	1,939	48.5	1,272	47.4	19,798	18.4	102.1
	Norfolk & Western	1956	39,657	11,084	50,741	.8	81,608	4,828	2,635	52.5	1,313	44.7	29,805	17.4	131.3
		1955	32,290	10,665	42,955	1.3	71,873	4,523	2,498	51.0	1,443	47.9	29,005	16.4	123.9
Southern Region	Atlantic Coast Line	1956	19,539	17,627	37,166	4.6	45,344	2,386	1,015	33.4	747	41.1	5,088	19.1	195.6
		1955	18,331	17,856	36,187	4.1	42,725	2,345	1,039	33.7	829	44.1	5,650	18.3	136.5
	Central of Georgia	1956	2,695	5,308	8,003	3.3	49,142	2,682	1,268	33.8	946	43.0	4,581	18.4	84.3
		1955	2,463	6,600	9,063	3.7	48,748	2,809	1,360	33.5	965	42.2	5,067	17.4	92.9
	Gulf, Mobile & Ohio	1956	5,296	10,301	15,597	6.7	77,904	3,935	1,877	33.5	1,079	48.2	6,155	19.8	105.9
		1955	5,327	11,437	16,764	2.7	73,675	3,803	1,795	32.4	966	44.6	5,934	19.4	106.9
	Illinois Central	1956	25,521	26,429	51,950	1.9	52,901	3,030	1,394	34.8	1,051	50.5	8,204	17.7	109.2
		1955	24,508	28,313	52,821	1.7	47,238	2,939	1,358	34.7	1,093	52.1	8,877	16.4	99.2
	Louisville & Nashville	1956	29,755	12,853	42,608	3.5	49,635	2,703	1,352	38.2	978	43.0	8,775	18.4	169.2
		1955	26,620	15,254	41,874	2.9	47,173	2,723	1,384	38.8	1,067	44.8	9,422	17.4	166.4
	Nash., Chatt. & St. Louis	1956	2,923	4,598	7,521	4.7	43,943	2,045	958	31.3	714	33.3	5,096	21.5	118.9
		1955	3,360	2,979	6,339	4.9	41,740	2,109	982	31.5	922	43.4	5,638	19.8	131.1
	Seaboard Air Line	1956	13,097	17,620	30,717	1.8	54,327	2,926	1,307	34.0	943	46.2	7,084	19.0	170.0
		1955	12,666	16,082	28,748	2.5	53,182	2,926	1,333	33.6	1,006	48.6	7,008	18.6	168.2
	Southern	1956	15,361	23,106	38,467	4.1	56,680	3,297	1,494	31.0	1,051	53.3	6,771	17.3	149.0
		1955	14,368	26,905	41,273	3.0	53,701	3,167	1,441	30.1	1,058	53.2	7,011	17.0	119.7
Northwestern Region	Chicago & North Western	1956	14,560	25,263	39,823	5.2	52,521	2,893	1,245	30.0	609	31.5	3,238	18.4	149.5
		1955	15,111	27,244	42,355	5.0	50,890	2,776	1,236	30.0	652	33.4	3,682	18.6	135.9
	Chicago Great Western	1956	1,753	3,723	5,476	3.7	78,372	4,030	1,854	31.1	1,355	63.8	5,516	19.5	139.8
		1955	1,626	4,113	5,739	3.2	73,592	3,837	1,764	30.3	1,390	65.5	5,451	19.2	140.8
	Chic., Milw., St. P. & Pac.	1956	29,042	30,609	59,651	6.2	60,639	3,085	1,368	31.1	682	35.0	3,854	19.7	112.1
		1955	28,700	32,813	61,513	5.6	56,591	2,864	1,267	30.3	661	33.9	3,821	19.8	113.7
	Chic., St. P., Minn. & Omaha	1956	1,131	8,063	9,194	2.3	40,106	2,473	1,121	31.3	604	28.9	3,305	16.7	142.4
		1955	1,178	7,698	8,876	3.0	34,561	2,406	1,056	31.3	613	30.6	3,454	14.7	84.8
	Duluth, Missabe & Iron Range	1956	13,102	946	14,048	3.6	58,343	3,605	1,918	52.8	284	10.4	7,323	17.2	39.7
		1955	13,890	930	14,820	2.0	22,757	1,602	770	37.7	54	2.7	1,414	15.3	19.9
	Great Northern	1956	21,804	18,839	40,643	2.8	55,048	2,681	1,291	34.5	1,081	46.0	5,554	20.8	117.4
		1955	21,328	22,280	43,608	2.5	47,741	2,512	1,193	33.3	987	43.2	5,370	19.3	114.1
	Minneap., St. P. & S. Ste. M.	1956	6,304	9,411	15,715	4.0	50,164	2,397	1,062	31.2	917	46.9	3,356	21.1	165.1
		1955	6,294	8,778	15,072	4.5	47,510	2,296	758	30.4	646	32.9	2,314	20.9	155.3
	Northern Pacific	1956	18,690	18,485	37,175	3.5	55,893	2,777	1,216	31.5	858	43.9	4,782	20.2	94.4
		1955	18,242	19,669	37,911	5.2	48,509	2,625	1,179	31.2	926	46.5	5,094	18.6	91.1
Central Western Region	Atch., Top. & S. Fe (incl. G. C. & S. F. and P. & S. F.)	1956	55,066	37,531	92,597	4.5	76,181	3,152	1,175	26.0	1,044	63.8	7,282	24.2	137.9
		1955	52,000	34,883	86,883	3.0	73,570	3,100	1,122	24.6	1,082	69.7	7,183	23.8	148.3
	Chic., Burl. & Quincy	1956	19,569	22,031	41,600	3.2	66,579	3,046	1,327	30.0	1,078	55.7	5,216	21.9	163.2
		1955	20,217	24,276	44,493	3.2	60,529	2,898	1,240	29.0	1,023	54.6	5,181	20.9	131.2
	Chic., Rock I. & Pac.	1956	12,618	21,850	34,468	5.3	59,182	2,836	1,179	30.2	1,065	57.9	4,791	20.9	185.3
		1955	11,458	21,049	32,507	4.9	58,065	2,841	1,172	29.5	1,037	56.6	4,283	20.5	172.7
	Denver & R. G. Wn.	1956	7,125	7,039	14,164	3.6	61,846	3,389	1,688	34.1	1,158	47.1	7,844	18.3	145.9
		1955	7,635	6,802	14,437	2.7	60,013	3,293	1,580	33.6	1,011	43.8	7,158	18.3	123.2
	Southern Pacific	1956	28,606	34,875	63,481	2.0	63,273	2,125	1,312	28.5	1,228	65.8	10,823	20.5	99.8
		1955	31,512	49,605	81,117	1.4	54,973	2,873	1,165	27.1	988	55.9	10,138	19.3	112.9
	Union Pacific	1956	29,850	34,386	64,236	2.1	78,884	3,165	1,354	29.2	1,556	82.7	10,275	25.1	148.5
		1955	27,693	37,751	65,444	1.7	74,375	2,983	1,232	28.2	1,495	84.1	9,966	25.2	134.6
	Western Pacific	1956	2,214	3,273	5,487	2.1	76,308	2,970	1,341	29.0	1,567	75.4	8,171	25.9	181.8
		1955	2,277	5,551	7,828	1.3	69,526	2,893	1,282	29.3	1,165	58.0	7,369	24.3	173.4
Southwestern Region	Kansas City Southern	1956	1,694	5,770	7,464	4.1	90,021	4,259	1,985	34.4	1,317	57.3	10,628	21.3	217.2
		1955	963	6,448	7,411	1.4	83,753	3,997	1,806	33.2	1,306	60.2	10,620	21.1	214.2
	Louisiana & Arkansas	1956	1,569	3,557	5,126	6.4	69,275	3,476	1,623	36.5	975	42.1	6,689	20.0	221.6
		1955	1,496	3,864	5,360	3.3	61,542	3,092	1,418	36.1	949	42.2	6,594	20.0	234.3
	Mo.-Kans.-Texas Lines	1956	4,339	6,841	11,180	5.7	58,759	2,676	925	22.9	1,011	69.4	3,529	22.0	162.0
		1955	3,792	6,491	10,283	5.3	59,928	2,842	1,217	28.2	1,258	68.9	4,085	21.1	137.7
	Missouri Pacific	1956	19,080	25,670	44,750	2.0	67,368	3,185	1,420	31.9	1,222	60.5	5,743	21.2	112.4
		1955	21,515	28,239	49,754	2.1	66,374	3,004	1,319	31.0	1,088	55.3	5,708	22.3	115.9
	Texas & Pacific	1956	3,223	6,578	9,801	2.5	80,017	3,792	1,440	28.6	1,441	82.5	7,627	21.2	200.7
		1955	2,808	6,980	9,788	1.5	73,185	3,448	1,295	27.8	1,464	86.8	7,996	21.3	196.7
	St. Louis-San Francisco	1956	11,766	11,070	22,836	3.7	57,662	2,716	1,232	30.8	1,087	53.5	5,567	21.3	197.8
		1955	11,858	11,103	22,961	3.2	55,407	2,692	1,188	29.5	1,058	54.7	5,180	20.6	182.2
	St. Louis Southw. Lines	1956	2,145	4,236	6,381	1.2	68,528	2,991	1,337	29.0	2,221	115.0	9,272	22.9	205.3
		1955	2,141	4,395	6,536	1.2	63,546	2,959	1,323	28.0	2,177	109.4	9,323	21.6	193.3
	Texas & New Orleans	1956	5,836	15,663	21,499	1.7	62,258	3,018	1,332	30.9	1,264	63.3	6,431	20.8	142.4
		1955	5,567	15,322	20,889	1.5	58,149	2,784	1,226	30.4	1,335	66.9	6,541	21.0	173.6

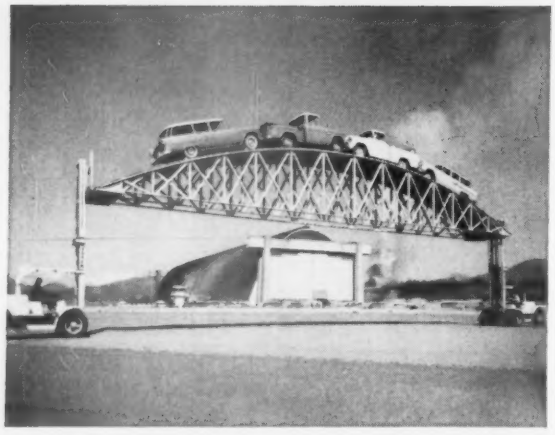
Compiled by the Bureau of Transport Economics and Statistics, Interstate Commerce Commission. Subject to revision.

a RAILWAY AGE Workbook Page



LARGE

Shop officials at the 100-acre Missouri-Pacific construction and repair facility at Desoto, Mo., estimate fir plywood car lining saves up to ten man hours per car. New cars are built on an assembly line basis; ¾" plywood is used for sides, 1" for ends. Workers say the panels go on faster, saving construction time. On a 40-foot car, labor costs come to only $13. Plywood lining helps insure tight, rigid construction. Walls are smooth, easy to clean, yet rugged and highly resistant to shock and impact.



STRONG

This 60′ fir plywood truss supports four vehicles to dramatize its remarkable strength and stiffness. A continuous panel of scarf-jointed fir plywood acts as both top chord of truss and roof deck. It's done by stressing the plywood in a curve to provide tremendous additional strength. The idea also points the way to new construction economies in large one or two story buildings. On the Diamond Lumber Co.'s big Johnson Creek warehouse in Portland, plywood trusses helped hold construction costs to $2.00 a foot.

VERSATILE

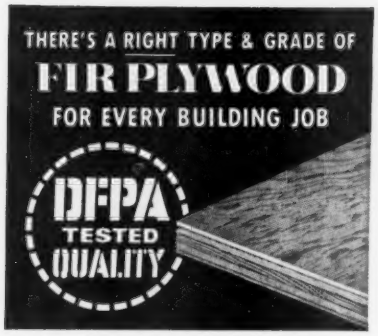
Southern Pacific's huge central mill in West Oakland uses three to four carloads of fir plywood every month for just about every conceivable building job. W. R. Jones, superintendent of the 135 man shop, says that fir plywood is one of the mill's most versatile and indispensable building materials. Huge stacks in the picture give only a hint of the volume regularly used. Plywood applications range from complete buildings to deck boards used to cushion and separate valuable ladings. Others include cases, containers, re-usable concrete forms, signs, fixtures and displays.

DFPA® TESTED QUALITY

FIR PLYWOOD

means quality construction

FOR MORE INFORMATION about uses shown above, design and/or specification data, mail coupon ⟶



1. SPECIFY BY DFPA QUALITY TRADEMARKS

DFPA grade-trademarks appear only on plywood manufactured, inspected and scientifically tested under the DFPA quality control program. DFPA, Douglas Fir Plywood Association, is a non-profit industry organization devoted to product research, promotion and quality maintenance.

2. CHOOSE THE RIGHT GRADE FOR EACH JOB

Fir plywood comes in two types: 1. *Exterior* (waterproof glue for permanent exposure to water or weather); 2. *Interior* (moisture-resistant glue) for indoor uses, crating, sheathing, maintenance. Within each type are several grades – i.e., panels with one good side, two good sides. Most popular grades are shown below.

EXT-DFPA — Exterior plywood for permanent outdoor uses

PlyPanel® for paneling, most indoor uses

PlyScord® is unsanded panel for sheathing, crating, bins, etc.

PlyForm® concrete form grades come in Exterior and Interior types.

SPECIALTY PANELS include 1. *Overlaid Exterior plywood* (hard, smooth, abrasion-resistant fused resin-fiber surfaces) for siding, signs, tanks, concrete forms; 2. *Textured panels* with smart grooved, brushed or striated surfaces for fixtures, siding, special decorative effects.

DOUGLAS FIR PLYWOOD ASSOCIATION
Tacoma 2, Wash. (Good U.S.A. Only) Dept. 192

☐ Please send basic fir plywood specification data.

☐ Also send information about use of fir plywood for.....

Name.....

Firm.....

Address.....

City..... Zone..... State.....

People in the News

AKRON, CANTON & YOUNGSTOWN. — **William G. Donovan** appointed New England agent, 29 Cushing avenue, Hingham, Mass., under supervision of district traffic manager, New York.

BURLINGTON. — **W. R. Eble,** assistant general manager, Chicago, retired March 1. **I. W. Crist,** assistant superintendent, Aurora (Ill.) division, appointed assistant to general manager, Lines East, Chicago. Mr. Crist's successor is **I. C. Ethington,** assistant superintendent, LaCrosse division, North LaCrosse, Wis., who in turn is replaced by **F. E. Rogers,** transferred from the Creston (Iowa) division. **F. W. Young,** assistant superintendent, Sheridan (Wyo.) division, succeeds Mr. Rogers, and in turn is succeeded by **W. S. Johnston,** trainmaster, Omaha-Lincoln divisions, Lincoln, Neb.

W. A. Spitzenberger, industrial agent, Chicago, appointed industrial and agricultural development agent, Omaha, Neb., succeeding **Val Kuska,** agricultural development agent, who retired March 1.

CANADIAN NATIONAL. — **S. Jeffrey Lockhart,** assistant to vice-president and general manager, Atlantic region, Moncton, N.B., retires March 31.

S. W. Fairweather, vice-president of research and development, CNR, has left Montreal to make a study of railway conditions in Pakistan, at the request of the World Bank, to which that country has applied for a rehabilitation loan. Mr. Fairweather will return late in April.

CANADIAN PACIFIC.—**J. M. Roberts,** assistant freight traffic manager (rates), Montreal, Que., appointed assistant to general traffic manager there. **W. Miller,** assistant general freight agent—rates and divisions, Ontario Algoma districts, Toronto, appointed assistant to freight traffic manager—system, rates and divisions, Montreal. **G. J. Wheatley** named chief of tariff bureau, Montreal, succeeding **E. O. Riddell,** who replaces Mr. Miller at Toronto.

Parker U. Grant appointed an assistant secretary, Montreal. Mr. Grant was formerly supervisor of board records.

CENTRAL OF GEORGIA.—**J. Bryan McKerley,** acting chief engineer, Savannah, appointed chief engineer. **W. S. Ray,** general superintendent bridges and buildings, named engineer of bridges and buildings. **W. E. Chapman,** superintendent of maintenance, in charge of tracks, bridges and buildings, appointed chief engineer, maintenance. **V. M. Oswalt** named superintendent, maintenance equipment, Macon. **J. C. Waldrop,** supervisor track, Macon, appointed process superintendent—track, at that point. **R. A. Youngblood,** supervisor bridges and buildings, Savannah terminal, named process superintendent, bridges and buildings, Savannah. **G. W. Benson,** superintendent bridges, Macon, named superintendent, structures and materials and **J. G. Watwood** appointed assistant superintendent, structures and materials, both at Macon.

CHICAGO & NORTH WESTERN. — Opened a new traffic office at Edmonton, Alta. **Robert N. Anderson** promoted to district sales representative.

COTTON BELT.— **G. T. Johnson,** assistant superintendent of transportation, Tyler, Tex., and **W. L. Roper,** general agent, Chattanooga, Tenn., retire March 31.

ELGIN, JOLIET & EASTERN.—**Donald G. Olson** appointed to newly created position of general traffic agent, Chicago.

ERIE.—Effective February 28, office of **E. H. Huffman,** division freight agent, Jersey City, N. J., is in Room 300 Colt building, 5 Colt street, Paterson, N. J.

FRISCO. — **T. P. Deaton** appointed director of labor relations; **W. J. Mulligan,** director of labor relations; **J. J. Ratcliff,** assistant director of labor relations, and **N. A. Weaver,** assistant to vice-president—personnel, all at St. Louis.

INTERSTATE COMMERCE COMMISSION.—**Dr. Charles S. Morgan,** chief carrier research analyst, Bureau of Transport Economics and Statistics, Washington, D.C., retired February 28.

KANSAS CITY SOUTHERN.— **T. F. Hooper** appointed trainmaster, Southern division, with jurisdiction over Fifth subdivision, Shreveport, La., succeeding **George Stevens,** who retired March 1.

Fred H. Strong appointed district freight agent, and **Lloyd G. Pence** named general agent, both at Baton Rouge, La.

READING.—**Peter A. Lucente** and **John A. Carbarns** appointed assistants to comptroller, Philadelphia. Mr. Lucente was formerly office manager in the president's office, and Mr. Carbarns was chief clerk to comptroller. **William E. Steptoe,** assistant to comptroller, retired March 1. **Paul L. Kautz,** special accountant, named general accountant, succeeding **Walter S. Pullar,** promoted to chief clerk to comptroller.

SOUTHERN.—**J. C. Naughton,** general auditor, Washington, D. C., appointed deputy comptroller there. **W. R. Divine,** assistant comptroller, succeeds Mr. Naughten. **Noah Garner,** auditor revenues, Atlanta, Ga., named assistant comptroller there.

SPOKANE, PORTLAND & SEATTLE. — **Guy E. LaSalle, Jr.** appointed bridge engineer, Portland, Ore., to succeed **B. M. Howard,** who retired March 1.

TEXAS & NEW ORLEANS.— **D. C. Dayton** appointed valuation engineer and tax commissioner, Houston, succeeding **T. F. Jones,** who retired February 28.

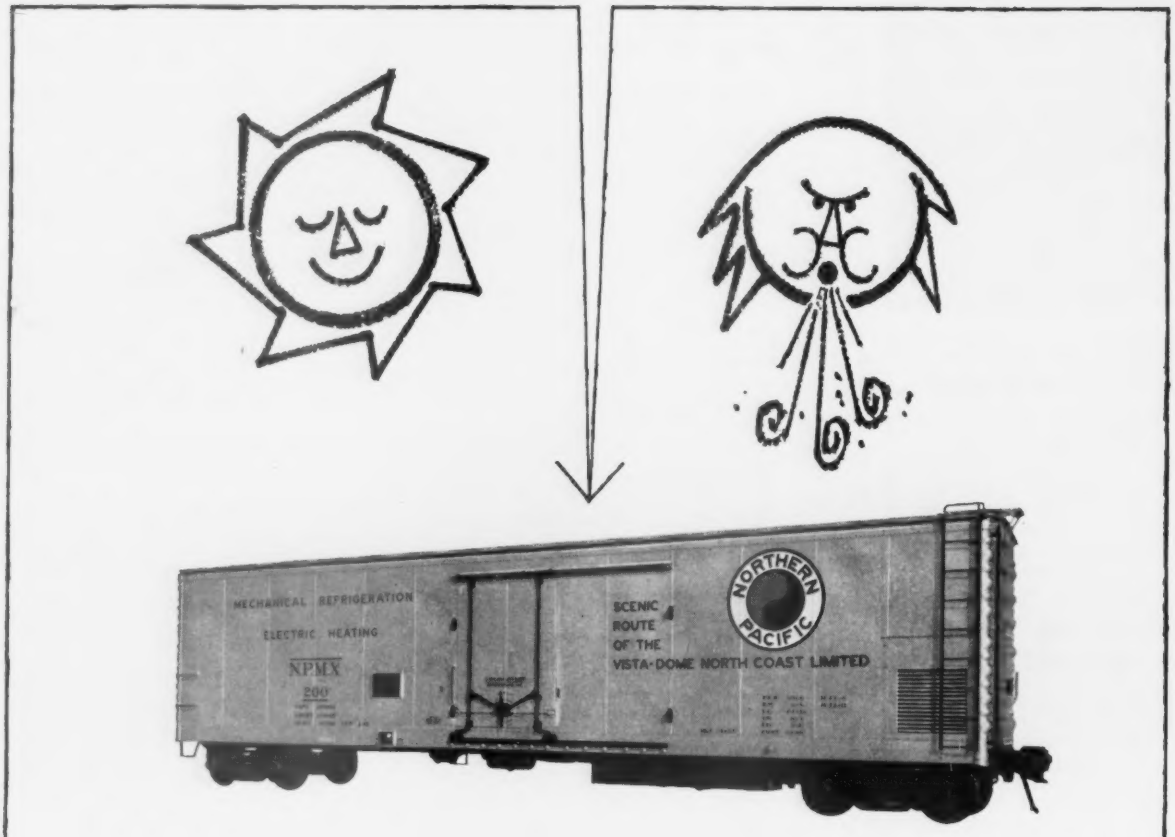
H. A. Tenney, assistant general passenger agent, Houston, retired February 28.

UNION PACIFIC. — **Frederick L. Morgan,** general freight agent (sales), Los Angeles, appointed assistant traffic manager there, succeeding **William F. Nash,** who retired February 28. **James D. Malefyt,** general agent, freight department, Los Angeles, succeeds Mr. Morgan. **H. J. DeLacy,** general traffic agent, Long Beach, Cal., replaces Mr. Malefyt and is succeeded by **R. W. Connell.**

Howard B. Jopling, assistant superintendent, Kansas division, Kansas City, Mo., appointed superintendent of that division, succeeding **W. O. Horne,** retired.

OBITUARY

Arthur G. Moody, 64, retired executive assistant to the president, **Illinois Central,** died March 9 in Illinois Central Hospital, Chicago.



With Honeywell-accurate control of temperature— you save on installation, operation, maintenance

Precision cooling in some cases—precision heating in others. That's what a mechanical refrigerator car's heating and cooling system *must* deliver in order to maintain constant temperature through extremes of heat and cold.

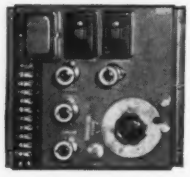
Northern Pacific solved this control problem with Honeywell's electronic control system. The system maintains the exact temperature required *automatically*. It controls both the heating and the cooling dependably, accurately and safely, with automatic changeover to provide either heating or cooling as required.

The Honeywell Temperature Control System is easy to install. Maintenance costs are lower too, because of complete accessibility. It is also the simplest system to operate. The easy-to-read, one-dial control panel (see illustration) indicates temperature settings. Personnel can check or vary setting without complicated instruction.

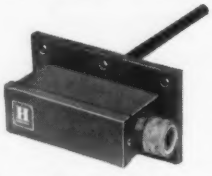
The Honeywell Electronic Temperature Control has been proven in use by several refrigerator car lines throughout the country. Get complete and fully detailed information by writing directly to Minneapolis-Honeywell, Dept. RA-3-128, Minneapolis 8, Minn.

Honeywell

First in Controls



Control panel for car interior type of installation provides "finger-tip control," plus an easy-to-read dial, which is divided into both fresh and frozen food ranges.



Rugged Space Thermostat with sensing element can be mounted within the refrigerated space or in the return air duct. Electronic sensitivity makes it accurate to within a small fraction of one degree.

The USS Solid Manganese Steel Self-Guarded Frog–

improves performance...minimizes maintenance...proves economical

The USS Self-Guarded Frog incorporates raised guards which have been cast integrally with the frog body. The guards guide the wheels past the frog point, eliminating the need for separate guardrails in the track opposite the frog. Therefore, a self-guarded frog is more economical than any other comparable frog that requires separate guardrails.

Cast in one piece from tough manganese steel, USS Self-Guarded Frogs are virtually maintenance-free, requiring no periodic body bolt tightening as do bolted rigid or railbound frogs and their guardrails. When used in freight classifying yards, terminals, and industrial yards, USS Solid Manganese Steel Self-Guarded Frogs will give many years of dependable service under rugged conditions. Hook twin frog plates shown under the frogs are also a specialty of United States Steel.

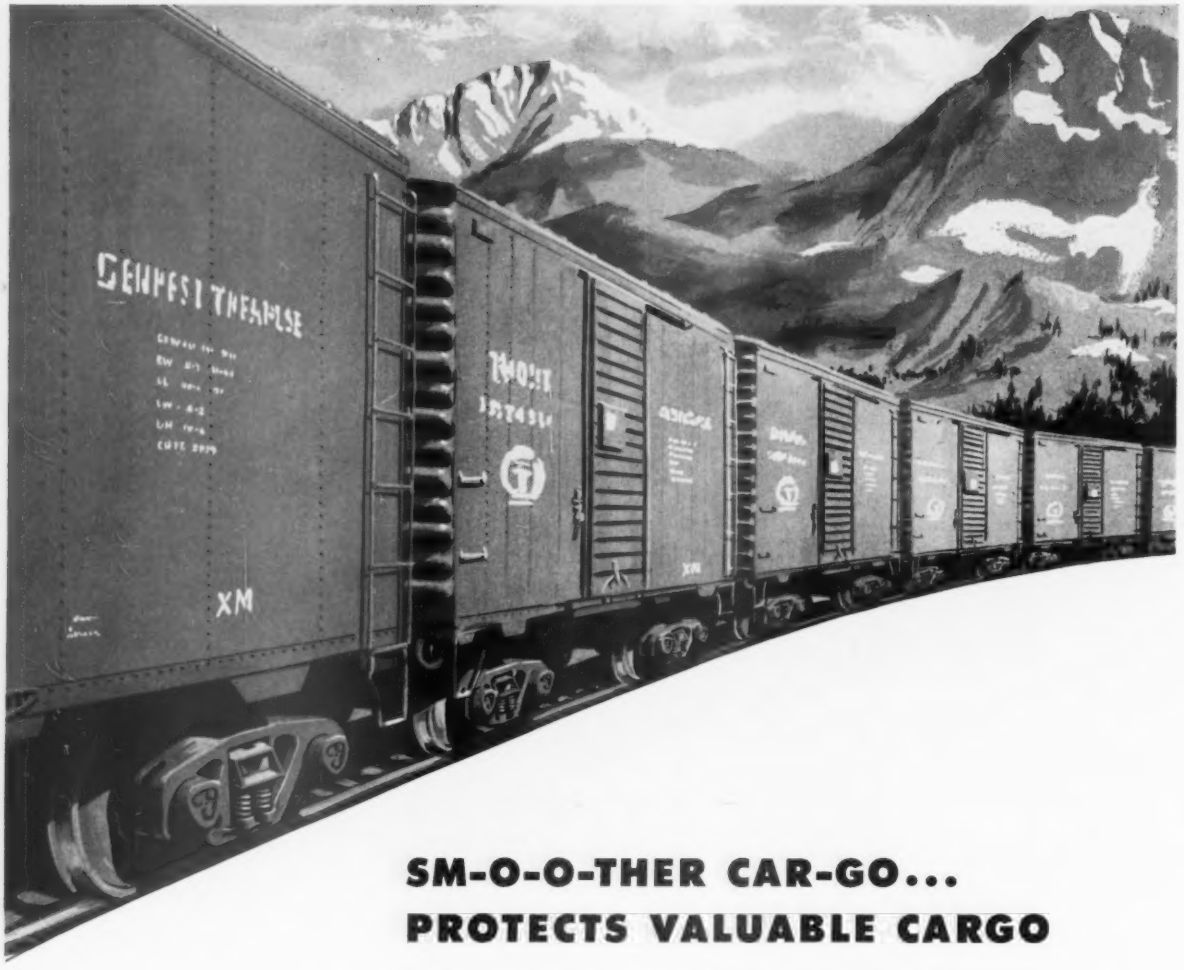
For complete data, photographs, and diagrams on the full line of USS Trackwork products, send for the free catalog, "USS TRACKWORK." Address your request to United States Steel Corporation, 525 William Penn Place, Pittsburgh 30, Pa. Also, you are invited to contact our engineers at any time for assistance in design.

USS **TRACKWORK**

UNITED STATES STEEL CORPORATION, PITTSBURGH · COLUMBIA-GENEVA STEEL DIVISION, SAN FRANCISCO
TENNESSEE COAL & IRON DIVISION, FAIRFIELD, ALA. · UNITED STATES STEEL EXPORT COMPANY, NEW YORK

7-627

UNITED STATES STEEL



SM-O-O-THER CAR-GO... PROTECTS VALUABLE CARGO

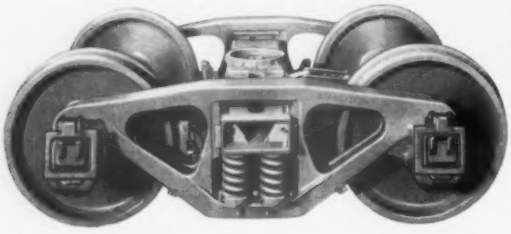
Higher speeds! Tighter schedules! These combine to give equipment and ladings many opportunities to become damaged. Damage claims are a serious problem for any road.

Barber Stabilized Trucks give smoother rides, maximum protection. Destructive forces are self-dampened through the coordinated action of Barber Stabilizer components. Actuating springs, friction shoes and special wear plates . . . arranged in a unique and ever-ready suspension system . . . guard against vertical shocks and bouncing, increase their frictional resistance on the downward stroke.

Over-solid spring blows are eliminated!

Two bargains in one! Barber Stabilized Trucks save your ladings; save your equipment.

Quicker, Easier Servicing, Too . . .



BARBER

STABILIZED TRUCKS

Standard Car Truck Company, 332 S. Michigan Ave., Chicago 4, Illinois. *In Canada:* Consolidated Equipment Co., Ltd., Montreal 2.

CLASSIFIED ADVERTISEMENTS

Rates: $10 per column inch (1" deep x 1⅝" wide)
Equipment used or resale acceptable in this section

FOR SALE
RECONDITIONED
RAILROAD CARS FOR INTERPLANT USE
GONDOLAS • BOX • FLAT
ERMAN-HOWELL DIVISION
332 South Michigan Avenue
Chicago 4, Illinois
WEbster 9-0500

BUY BONDS

FOR SALE
1500 KW RECTIFIER
WESTINGHOUSE — Mercury Arc. Ignitron 3/60/44,000 AC. 15,000V. DC, Automatic Controls.
2—750KW, GE Rotary Converters-HCC-6-600V. DC.
S. M. DAVIS
510 LaSalle St. Louis 4, Missouri

Take advantage of space

in this section.

We Own and Offer
For Sale
At Very Attractive Prices

2—Light weight streamlined trains.
4—Self-propelled diesel electric mail & baggage cars.
4—Passenger trailer cars for above.
1—45-ton Porter diesel electric locomotive.
1—65-ton Whitcomb diesel electric locomotive.
50—50-ton all steel drop bottom gondola cars.
10—50-ton all steel twin hopper cars.
3—70-ton all steel solid bottom gondola cars.
1—50-ton all steel pulpwood car.
1—Jordan Spreader.

Phone — Wire — Write

HYMAN-MICHAELS COMPANY
108 No. State St., Chicago 2, Ill.
DEarborn 2-5422

ADVERTISERS

ACF Industries 23, 43
Acme Steel Company 47
American Steel Foundries 24, 25
Automatic Electric Sales Co. 16, 17

Baltimore & Ohio Railroad Co. 39
Bird & Son, Inc. 36
Byers Company, A. M. ..... Front Cover

Caterpillar Tractor Company 37
Classified Advertisements 57
Columbia Geneva Steel Division, United States Steel Corporation 55

Davis, S. M. 57
Douglas Fir Plywood Association 52, 53

Erman-Howell Division 57
Exide Industrial Division, Electric Storage Battery Company 6

Farr Company 40

General Railway Signal Company ..... Back Cover

Hyman-Michaels Company 57

International Nickel Company, The 22

Johns Manville 19

Lewis Bolt & Nut Company 46

Minneapolis Honeywell Regulator Co. 54
Miner, Inc., W. H. 3
Motorola, Inc. 8

National Aluminate Corp. ..... Inside Front Cover
Nelson Iron Works 46

Railway Track-Work Company 48
Reynolds Metals Company 49
Rust-Oleum Corporation 38

Smith, Inc., L. B. 42
Standard Oil Company of California 45
Standard Car Truck Company 56
Symington-Gould Corporation ..... Inside Back Cover

Tennessee Coal & Iron Division, United States Steel Corporation 55

Union Switch & Signal Division of Westinghouse Air Brake Company 4
United States Borax & Chemical Corporation, Pacific Coast Borax Company Division 41
United States Steel Corporation, United States Steel Export Company 55

Westinghouse Air Brake Company 20, 21

This index is an editorial feature, maintained for the convenience of readers. It is not a part of the advertiser's contract and Railway Age assumes no responsibility for its correctness.

Can You Pull the Pin on Pessimists?

The March issue of Harper's Magazine has an article entitled "The Second Transportation Revolution," predicting a gloomy future for the railroads. The author, Marvin J. Barloon, is a professor at Western Reserve University. But he can scarcely qualify as an unprejudiced witness because he also does work on the side for agencies of transportation in competition with the railroads. Appearing at the hearings before the House Committee on Interstate Commerce last June, he opposed taking away the power of the ICC to regulate competitive rates.

He did so because of the "large size of the typical railroad in competition with the carrier in motor transportation and transportation on the waterways." In short, he wanted continued regulatory protection for the "little fellows" against the big, rich railroads. But now, in the Harper's article, it isn't the truckers and the inland waterways that are little and weak—instead, they are booming giants and the railroads are portrayed as being on the skids.

Overlooks Railroad Achievements

The author's argument is as full of holes as a moth-eaten sweater. He gets enthusiastic about the rapid growth of what may be called "specialized transportation"—i.e., pipelines; and barges, ships and trucks designed to move specific commodities. He conveniently neglects to report that equipment tailored to meet the needs of specific commodities is also provided for railroad patrons, and that it is a healthy and growing traffic.

He also fails to explain that the railroads would be much more vigorous competitors than they are in the field of "specialized transportation," except that regulatory law doesn't permit railroads to compete rate-wise with private and other unregulated carriers; and that he has exerted himself to keep their regulatory shackles on them. It's like taking a man's shoes away from him and then criticising him because he's barefooted.

The author says that the development of the belt conveyor system in Ohio has been held up by political opposition, but he fails to mention that similar political action is all that prevents the railroads from going out after a lot of traffic that would otherwise be theirs. He credits trucks with being an integral part of the process of automobile manufacture—bringing parts to assembly plants on fast and dependable schedules. But he does not see fit to report the even larger role that swift and reliable railroad service also plays in this process.

Mr. Barloon's technique of painting the railroads in a hue of blue is very simple. He just spotlights the accomplishments of other types of transportation and omits notice of, or damns with faint praise, similar accomplishments by the railroads.

THIS RELATES TO:

- **1—Challenging competition**
- **2—Holding to high service standards**
- **3—Increasing internal strength**
- **4—Getting a higher level of earnings**
- **5—Improving tools and methods**
- **6—Seeking a friendlier environment**

The great upsurge in inland waterway transportation he ascribes to two factors—both technological—viz., the diesel towboat and radar. Unmentioned is the greatest factor of all—the willingness (so far) of the country's taxpayers to provide ever deeper waterways and ever bigger locks for bigger tows, all without one single cent of payment by the users of these waterways. One of these days the taxpayers will wake up.

Mr. Barloon does concede that the railroads are making a great deal of technological progress—but he attributes little importance to it because, he says, "this progress is in the direction of cost reduction rather than of service improvement." If existing and prospective savings in expense are effective in building traffic for trucks and barges, as Mr. Barloon says, then how can it be that such savings are of no effect in building railroad traffic?

Railroad Service Improvements

It is, of course, perfectly obvious—Mr. Barloon to the contrary notwithstanding—that technological progress improves the quality of railroad service, as well as reduces its cost. To cite but one example, automatic (or nearly automatic) yards greatly reduce transit time on freight shipments.

Mr. Barloon looks to us like a judge in a beauty contest who knows some of the candidates personally so well that he finds it hard to be objective in his appraisal. When he contemplates the contours of one of the contestants, his pulse and temperature rise rapidly—but the equal dimensions of another aspirant don't even cause a flicker in his circulatory system.

Railroaders and suppliers must prepare themselves to point out the holes in this kind of propaganda—if they see signs that anybody is paying serious attention to it.

MODERNIZE REBUILT FREIGHT CARS ECONOMICALLY, EFFICIENTLY...

with

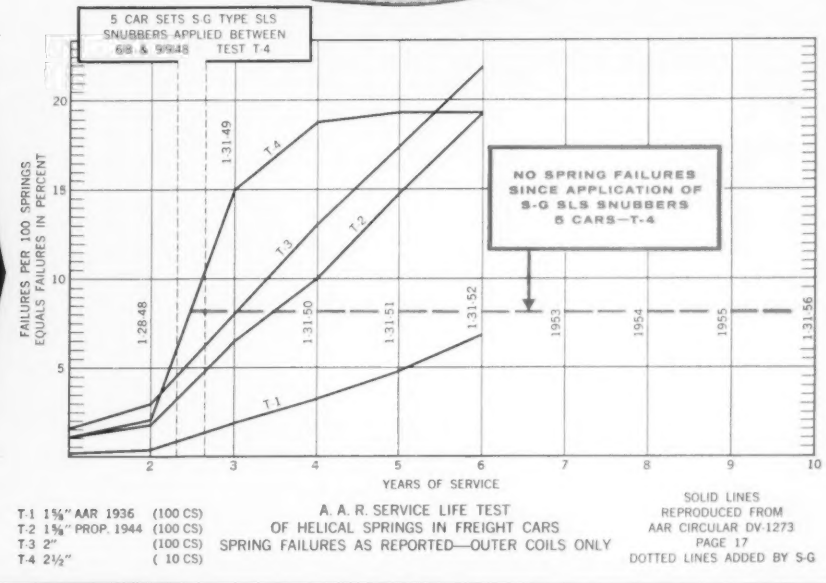
Symington®

TYPE SLS

2½" TRAVEL

SNUBBERS

A. A. R. SPRING TESTS PROVE SYMINGTON TYPE SLS SNUBBERS SUPERIOR IN LONG SERVICE LIFE AND EFFECTIVE RIDE CONTROL.



T-1 1¾" AAR 1936 (100 CS)
T-2 1¾" PROP. 1944 (100 CS)
T-3 2" (100 CS)
T-4 2½" (10 CS)

A. A. R. SERVICE LIFE TEST
OF HELICAL SPRINGS IN FREIGHT CARS
SPRING FAILURES AS REPORTED—OUTER COILS ONLY

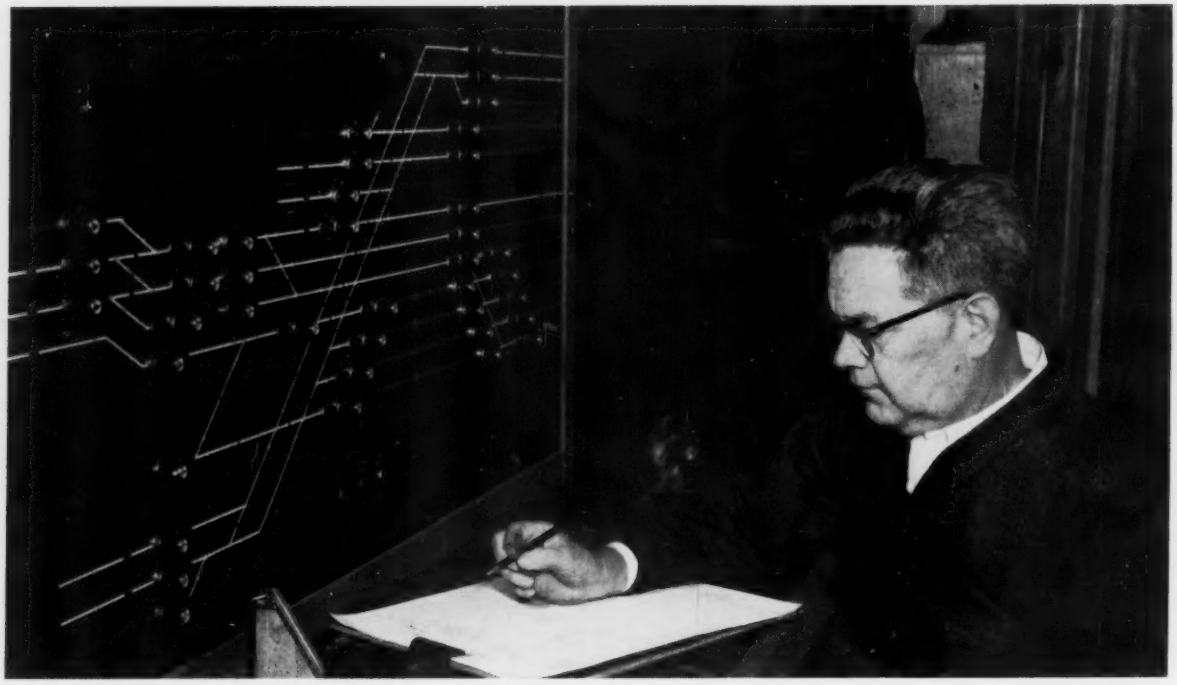
SOLID LINES
REPRODUCED FROM
AAR CIRCULAR DV-1273
PAGE 17
DOTTED LINES ADDED BY S-G

For rebuilt freight cars Symington Type SLS Snubbers in combination with A.A.R. 2½" Travel Springs provide an economical means of spring support, with proper control of spring harmonics plus long service life. For detailed information write for Report No. TE-1948-22.

THE **Symington-Gould Corporation**

WORKS: DEPEW, NEW YORK

New York • Chicago • St. Louis • Boston • San Francisco • In Canada: ADANAC SUPPLIES, LTD., Montreal, Quebec

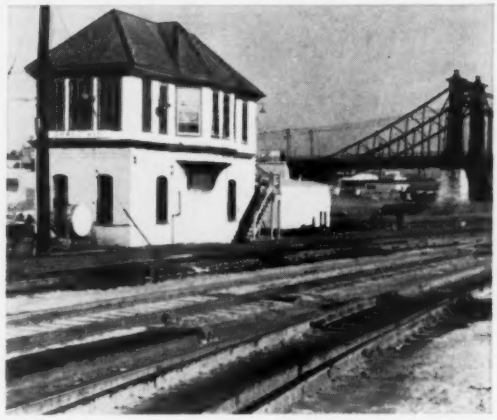


342-ROUTE NX PLANT handles 250 moves daily

At Grand Avenue interlocking* in St. Louis, a 41-year old interlocker has been replaced with a modern GRS NX (eNtrance-eXit) interlocking.

With NX, a single operator easily handles this heavy traffic. Only two motions suffice to set up even the most complex route. NX is a flexible tool for interlocking control — you can choose the method of operation that meets your needs:

- Automatic or manual route selection
- End-to-end or signal-to-signal route lineup
- Automatic or manual route restoration
- Automatic, semi-automatic, or manual signal control



Ask your GRS district office for further information–find out how you can save time with the more efficient operation available with NX.

*Grand Avenue interlocking, owned by St. Louis—San Francisco Ry. Co., is maintained by Missouri Pacific employees, with maintenance expense borne by the Frisco.

GENERAL RAILWAY SIGNAL CO

ROCHESTER 2, NEW YORK

NEW YORK 17 • CHICAGO 1 • ST. LOUIS 1 2881